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Erasmus Wilson Lecture
ON
OVARIAN TERATOMATA.

Delivered before the Royal College of Surgeons of England on Feb. 10th, 1908,

BY SAMUEL GEORGE SHATTOCK, F.R.C.S.,
PATHOLOGICAL CURATOR OF THE COLLEGE MUSEUM.

[MR. SHATTOCK commenced by describing an embryoma projecting into an ovarian cyst in which the indications of a second fœtus were unusually evident. The embryoma consisted of a trunk furnished with two lower limbs and a peritoneal cavity containing a blind coil of intestine. The skeleton comprised a short rudimentary spinal column with a pelvic girdle, and in each of the lower limbs there was a long osseous element filled with fatty marrow. Between the limbs were two distinct labia bounding a blind depression, and behind these a perineal raphé. The embryoma, except on the soles of the feet, was covered with short fine hair, but over the pubes there was a well-pronounced tuft of long pubic hair. The wall of the cyst into which the embryoma projected was smooth and devoid of hair or epidermal lining. He continued :—]

The growth of pubic hair is a subject of no little interest in this remarkable specimen. It must be taken as marking the advent of puberty. As the presence of sexual glands in the embryoma itself may be excluded (for there is nothing but a coil of intestine in the peritoneal cavity), the explanation of its puberty must be sought in a maternal influence, or more definitely in the action of an internal secretion produced by the sexual glands of the autosite; the autosite and the embryoma will have acquired the cutaneous marks of puberty simultaneously. It is, in fact, a natural experiment which successfully carries out one devised and attempted by Dr. C. G. Seligmann and myself. Our experiment consisted in grafting together by the legs a castrated cockerel (after its recovery) and an intact cockerel of the same age and kind. Although the operation was itself successful, one of the grafted birds, in each of the four cases in which it was carried out, died within a few days without obvious cause. The object of the experiment was to see whether the castrated bird would, as it matured, put on the plumage and comb of the cock from the access of blood to it from the intact bird. In the ovarian embryoma the experiment has been accomplished. The trunk of the embryoma being without heart and independent circulation has been supplied with blood from the side of the autosite and with the result that the overgrowth of hair which marks the advent of puberty has actually been brought about.

[Mr. Shattock next demonstrated a series of ovarian teratomata, showing the progressive disappearance of limbs from an amorphous trunk, the true nature of which latter appeared from the presence of a rudimentary intestine, or (as he had demonstrated in three cases) from the presence of a central nervous system. He continued :—]

The presence of teeth necessarily shows the teratomatous character of the cyst in which they occur; but in the case of other ovarian teratomata, even those of a well-pronounced kind, teeth are wanting. These differences we must attribute to differences in the developmental arrest which involves now one part and now another of the embryoma. There are acormous (or trunkless) and acephalous (or headless) embryomata, as there are trunkless and headless acardiac homologous twins. In regard to the displacement or lateral dislocation of dentigerous and other bone, and the utter absence in most cases of any structure morphologically like a cranium, one must not overlook the mechanical action of the enlarging cyst and the pressure of its contents in exaggerating what are, probably, also original defects of formation. The striking length of the hair in certain ovarian cysts, again, can hardly be explained, except by regarding such hair as growing from a cutaneous area answering to the scalp, and this view is strengthened when the hair arises in the neighbourhood of a dentigerous process of bone. The hair in one College specimen (Mr. J. Bland-Sutton's) is 20 inches in length. Here, as in other cases, the mass of hair is confined to an elevation covered with true skin—i.e., to the proper teratoma. But the view that such dentigerous bones represent the cephalic end of an embryo is definitely proved by the presence of central nervous tissue in connexion with them. So long ago as 1853 Henry Gray described an ovarian cyst containing a tooth and hair, and projecting into this cyst was an eminence about the size of a walnut, situated near the dentigerous bone referred to; the wall of this eminence was delicate, its inner surface was highly vascular, and the contents consisted of a soft white substance, the surface of which was perfectly smooth and presented all the characters of brain. On microscopical examination it was found to consist entirely of the ordinary elements of nervous matter, being composed of a very large number of varicose nerve tubules of varying size intermixed with the "elementary components of grey matter—viz, nuclei and nucleated vesicles containing granules."

[Mr. Shattock also demonstrated the presence of a stomodæum with two lips and an appendage containing elastic cartilage and representing a rudimentary pinna at the same end of an elongated ovarian teratoma. He continued :—]

The astonishing excess of teeth, in rare cases met with in a teratomatous cyst, is perhaps explained by the occurrence of twin or triple teratomata in a *single* cyst. Or, it may be that the excess is brought about by an abnormal extension of the epithelial surface corresponding with that of the gum during the early enlargement of the cyst, so that the dental germs are increased in number and give rise to as many teeth or ill-deformed denticles. For even if we allow that two complete sets of teeth, a first and second, have been produced, the total (20 + 32) would not equal the numbers which have been encountered, which may be over 100. One must not, of course, fall into the error of reckoning multiple dentigerous cysts in the same ovary as a single "dermoid," and must also recognize the possibility of such coming to communicate through their partitions so as to produce a single multilocular cavity.

Not one of the least strange things in connexion with ovarian teratomata is that though themselves so abnormal they may nevertheless be the seats of disease. Setting aside the different degrees of aplasia and hypoplasia which, *ipso facto*, they illustrate, or the misdevelopment of particular teeth, or the presence of odontomata upon their fangs, we must look upon the relative amount of fat as in some cases quite reaching the proportion of disease. It is not simply subcutaneous fat duly proportionate to the skin over it, but it may constitute the bulk of the embryoma, the amount of bone and other structures being relatively insignificant as in the case described in the present communication, or in others already referred to from the College Museum (Nos. 4511, 4511A, 4526E). The morbid condition, in short, is that of lipomatosis, or a generalised abnormal formation of fat, as distinguished from a local tumour or lipoma. For it must be borne in mind that the presence of any fat in the ovary itself is something altogether as abnormal as it is in the testicle and that the fat of the embryoma appertains entirely to the latter. I am not aware of a fatty tumour ever having been observed in the ovary. In the testicle I have examined one only, and this in the horse; and so far as my knowledge goes it is unique.

But that hydromyelus should occur is still more strange. Yet it is shown in three of the teratomata already described, from Specimen No. 2371 in St Thomas's Hospital Museum. In one of these the tubular hydromyelic sac is lined with columnar epithelium and the halves of the spinal cord lie one on either side of it, the whole being invested with a separable membrano-cutaneous covering or body-wall. As there is no spinal column we cannot speak, of course, of a spina bifida. The largest example of this morbid condition of the embryoma is contained within an ovarian cyst in the opposite ovary of the same patient. It consists of a double sac, the portions of which, each about three and a half inches in length, lie side by side, and communicate by a small aperture half surrounded by a process of bone. From the inner aspect of the sac a delicate continuous membrane can be raised; there is no trace of further structure. Yet that this bilocular sac is an embryoma dilated into a great cyst by hydromyelic and hydrocephalic distension is clear if it be compared with that first referred to in which the halves of a spinal cord lie on the sides of the sac; and by the circumstance that the sac itself is furnished with a delicate, separable lining representing the meninges of the dilated central nervous system, and an outer membranous body-wall.

We may, indeed, classify the last as a new form of cyst and

add it to the heterogeneous category of such without violence, for it is as simple in structure, though not in its origin, as a cyst, say, of the urachus. It is a cyst produced from an embryo and I venture to name it an *embryonal cyst*. And such teratoma may become the seats of malignant disease. We may be sure that the localised epithelioma or squamous-celled carcinoma encountered at times in an ovarian cyst has arisen in the cutaneous covering of a teratoma. But more frequently the tumour arising from the teratoma is of a mixed kind; all the histological elements of the teratoma, seeing that they are all embryonic residua, may partake in the abnormal overgrowth and the resulting tumour may be simple, or malignant producing metastasis. Mr. H. T. Hicks and Mr. J. H. Targett have published two cases of malignant embryoma of the ovary, one of the patients being but six years of age. And a case of yet younger age is recounted by Mr. L. S. Dudgeon, where a huge tumour of this kind filled the abdomen of a child under four years of age. In some of the similar cases reported cerebral tissue has been found in the tumour.

To return now to the theories which have at different times been advanced in explanation of the so-called ovarian dermoid. One, which has been long held, is that such cysts result from an impregnation which has been relatively abortive and incomplete in result. As a sufficient refutation of this view it can be pointed out that these cysts may be met with in the unmarried and in children, and this objection has not yet been met. We often find it recorded that a patient from whom such a teratomatous cyst was taken was unmarried. Yet such a history of itself is scientifically inconclusive in this regard. And then we come across one of those decisive but simple observations of Hunter, which forces us to believe that he saw its importance for the simple reason that he made it. In the case of the Hunterian specimen (No. 4508 in the College Museum) we find it recorded that the hymen was intact. The cyst was taken from a woman, aged 18 years, and from its otherwise smooth interior there projects an embryoma covered with piliferous skin and bearing a tooth. And as regards the presence of such cysts in children, No. 4514 is a thin-walled ovarian cyst bearing a small piliferous teratoma, which contains cartilage, the parts being removed from a girl, aged eight years. It is clear, moreover, that in the case of the teratomatous or so-called dermoid cyst of the testicle the theory of a post-natal impregnation is reduced to an absurdity. The view usually adopted in regard to the ovarian teratoma is that the latter is due to the impaction of a second individual which has started on its development synchronously with its host but which has subsequently failed in its progress.

The chief argument against the theory of a twin impaction in explanation of the ovarian embryoma is the sheer commonness of the latter; partly this and partly the difficulty of understanding why such an impaction should so regularly take place into the substance of the ovary and why, being so common in the ovary, it should be of such excessive rarity in the testicle, seeing that these organs occupy the same primitive position and are, in fact, at first indistinguishable from one another. The occurrence, again, of a teratomatous cyst in each ovary adds to the difficulty of accepting this explanation. This bilateralism is, indeed, very far from rare. The presence of two or even three teratomatous cysts in the same ovary accentuates the difficulty, for it would involve the impaction of as many embryoes.

A further difficulty in regard to the theory of impaction arises from the discrepancies referable to the colour of the hair in such cysts. In multiple teratomatous cysts of the same ovary the hair may be of different colour. In bilateral dermoids, too, the hair may be of different colours; it has been found dark in one cyst and light in the other. The colour of the hair in the dermoid again may be markedly different from that of the patient. In the case described in the present communication the hair of the teratoma, which consists of a tuft growing from the pubes, the parasite being acephalous and devoid of teeth, is of the palest flaxen, whilst that of the patient is of a well-pronounced or medium brown, although, as is so regularly the case, it had darkened since infancy; it is fair, however, to contrast the two, for the growth of the pubic hair in the parasite must be regarded as synchronous with the puberty, and not with the infancy, of the patient. A more striking instance of this difference is afforded by a specimen in which the cyst is filled with a mass of shed hair, the colour of which is flaxen or light yellow; hair of similar colour grows from the teratoma: the hair of the patient and that of her husband are of a full black.

Such facts go towards showing, in the first place, that the piliferous skin of the "ovarian dermoid" has not the same histological origin as the skin of the patient, i.e., that its pertaining epidermis is not a portion of the general and primitive epiblast. In the second place, they go towards showing that the embryoma is not an impacted homologous twin. For such twins (which arise from a single ovum, are formed on a single blastodermic vesicle, and inclosed within a single amniotic sac) are not only of the same sex, but so alike in detail as to be with difficulty or not at all distinguishable. This, too, is true of double monsters, which have the same kind of origin as homologous twins, from the misdevelopment of which they arise. For the colour of the hair is, I find, invariably the same upon the two heads. Were the ovarian embryoma due to the impaction of a homologous twin its hair should be of the same colour as that of the patient; and in the case of multiple embryomata it should, moreover, be of the same colour in all.

The foregoing considerations lead me to propose a theory which may explain both the frequency of the ovarian embryomatous cyst and its particular location, a theory, moreover, with which the occurrence of embryomatous cysts in the testicle is not incompatible and which at the same time is in harmony with their rarity. This theory is, that the ovarian teratoma results from the fertilisation of one of the primordial ova in the ovary of the embryo, so that the embryo gives rise to a second imperfect individual whose origin is, therefore, not synchronous with but of later date than itself. It is the formation of one embryo within another, and the name I venture to suggest for the theory is that of epi-embryogenesis.

With respect to the access of spermatozoa to the primitive ova, it is not necessary to suppose that a second penetration of the developing ovum takes place. It is well known that more than a single spermatozoon may perforate the investing membrane of the ovum. It becomes thus quite conceivable that surplus spermatozoa may remain about the segmenting mass or morula, may become engaged between its component cells, and in this way be actually ready in the blastoderm to fertilise the primordial ova which are developed so soon after its lamination and the cleavage of the mesoblast which results in the formation of the body-cavity. The longevity of spermatozoa when under conditions not adverse to their life is a subject upon which little is known. Somewhat to the point, however, is the fact, well known to poultry breeders, that after a single impregnation the hen of the turkey will lay her whole brood—that is, will lay the entire succession of fertile eggs, about 12 in number, which makes the brood, one egg being laid about every other day and the whole process extending over a period of about four weeks. Mr. W. B. Tegetmeier has told me that he knew of one instance in the common fowl in which fertile eggs were laid and hatched six weeks after the access of the male bird.

Not only does this theory of an epifecundation of primordial ova in the ovary of the embryo explain the frequency and particular location of embryomatous cysts of the ovary, but it explains the multiplicity of such cysts in the same ovary and their occurrence in both the ovaries of the same patient. The theory, again, will account for the difference in colour of the hair in multiple teratomatous cysts, or of the teratomata in cysts of opposite ovaries. For such differences become examples only of the differences in colour so frequently seen in children born of the same parents, or still more closely in heterologous twins whose hair may be of different colour. Nor does the difference in colour between the hair of the embryoma and that of the patient offer any difficulty. The patient is, whilst yet an embryo, the mother of the teratoma; the father of the teratoma is the father of the patient. The colour of the hair of the embryoma need not therefore resemble that of the patient, the mother; it might resemble that of the father, or it might not resemble either, but that of a more remote ancestor.

Amongst zoologists three methods of embryogenesis are recognised in addition to the common one in which the ovum, previously and independently matured by the extrusion of its polar globules, is fertilised by a spermatozoon. 1. Shock-fertilisation: this involves the preliminary independent maturation of the ovum, but the incentive to the subsequent division of the latter and the development of the embryo is mechanical. The ova of the star-fish, as is now universally known, can be fertilised by means of "soda-water" added to the sea-water of the aquarium, or by mere shaking. 2. Parthenogenesis, which takes place in many of the insecta (particularly the bee), involves a maturation of

the ovum, but not a proper fertilisation, the embryogenesis being started by the return, or want of extrusion, of the second polar globule which acts in place of the male element. 3. Sporogeny: here the embryo develops from the ovum without any preliminary maturation of the latter and apart from fertilisation. This phenomenon has been observed in the jelly-fish.

The theory of epi-embryogenesis in connexion with ovarian embryomata involves (as would also that of parthenogenesis) a premature preliminary "maturation" of the ovum, seeing that the process of fertilisation would take place in the embryo itself. The phenomenon of parthenogenesis, however, is limited to forms so far below mammals that it is difficult to think it obtains with such great frequency in the human subject as the common occurrence of ovarian teratomata would necessitate. Still more inapplicable is the phenomenon of sporogeny, the only one which does not involve a histological maturation of the ovum, when the extreme lowness of the forms in which it occurs is considered.

Let me, in conclusion, take up the difficulty presented by the occurrence of similar embryomatous cysts in the testicle. How is the extremely rare occurrence of such cysts to be accounted for on the theory advanced? In the embryonic sexual gland the proper reproductive cells are at first undifferentiated from one another. These cells become in the female the ova and in the male the spermatogenic elements of the testicle. The occurrence of embryomatous cysts of the testicle, then, would involve on the theory of epi-embryogenesis a hermaphrodite condition of the gland in which the cyst is formed, and the intra-embryonic fertilisation of one of the ova. True it is that in the human subject the condition of glandular hermaphroditism is but rarely observed, but still more rare is the teratomatous cyst of the testicle. The rarity of the one accords with the rarity of the other. Yet on any of the other theories advanced such cysts should be as frequent in the testicle as they are in the ovary.

A Lecture

ON

THE TREATMENT OF TUBERCULOSIS BY DIFFERENT KINDS OF TUBERCULIN.

Delivered at the Medical Graduates' College and Polyclinic, London, on Nov. 12th, 1907,

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GENTLEMEN,—The treatment of phthisis pulmonalis and other forms of tuberculosis is of such intense urgency and importance that any method based on scientific investigation ought to be thoroughly tested with a view to diminish the awful mortality in this country from tuberculosis. I have been greatly disappointed in the treatment of phthisis by Koch's tuberculin R., but in the treatment of surgical tuberculosis, such as tuberculous peritonitis, meningitis, bone and joint disease, enlarged glands and lupus, the results with tuberculin R. (Koch) have been most excellent, and I have at present a great many cases under treatment in hospital by this tuberculin as supplied by the Clinical Research Association.

I have recently had prepared from my own cultures of bovine tubercle a tuberculin for use in phthisis pulmonalis with, so far, encouraging results. A perusal of my paper in the April, 1907, number of *Tuberculosis* (Berlin) will explain the reason why tuberculin from bovine sources should be used for phthisis, whilst Koch's tuberculin R., which is prepared from human tubercle bacilli, should be used for the other forms of tuberculosis. The general results and impressions of that work are given here, but in the limited space at my disposal it is impossible to do more than touch generally on a few of the more important points investigated during this research.

Following the lines of my original paper of 1903, I have no reason to modify the view then set forth—namely: "That human and bovine bacilli are divisible into two distinct types of a common species: (1) typus humanus; and (2) typus bovinus." Another fact of the most profound importance in studying this problem is that for centuries man has been accustomed to feed upon cattle and their products—milk, butter, cheese, &c.—and in this way the human body has become tolerant to bovine tubercle bacilli. Whilst I firmly believe that human and bovine bacilli are different types of parasites, yet I am convinced that bovine bacilli are freely communicable to humans and are the cause of a large amount of tuberculosis in children. I believe that man is attacked by two distinct varieties of tubercle, one conveyed by infection from one person to another, the other by receiving into the body bovine bacilli from infected food. In other words, the human body is susceptible to both forms of tubercle. The difficult problem to determine now is what particular lesions in the human body are produced by each variety of tubercle.

To sum up my own views on the distribution of tubercle in the human body, I would say, speaking provisionally and without any final evidence of proof, that (1) tubercle bacilli of the typus humanus produce phthisis pulmonalis, ulceration of the intestines, and tuberculous laryngitis; and (2) tubercle bacilli of the typus bovinus produce tuberculous peritonitis, tuberculosis of the lymphatic glands, tuberculous joints, meningitis (probably), and lupus. I am of opinion, also, that acute miliary tuberculosis is of bovine origin.

Working on the hypothesis that the human body is attacked by two varieties of tubercle which may be present in the body at the same time and which, generally speaking, are antagonistic to each other, I have devoted my attention within the last few months to the preparation of tuberculins for the treatment of these different lesions. After a fairly complete experience I have come to the conclusion that Koch's tuberculin R. has little or no healing effect in phthisis pulmonalis, and when we remember that it is manufactured from human tubercle, if my theory is correct it is exactly what we would expect. Consequently I have had prepared from one of my own pure cultures from bovine sources a special tuberculin for the treatment of phthisis pulmonalis. The tuberculin was made from a typical culture of "perlsucht" and was very carefully sterilised and standardised. Several guinea-pigs were inoculated but without any bad effect. Working on these lines I am at present treating over 70 cases of surgical or bovine tuberculosis in the wards of Mill Road infirmary with Koch's tuberculin R., commencing with very small doses and slowly increasing up to a maximum dose of one-hundredth of a milligramme. The results, without any accessory treatment, have been beyond all my anticipation. Enlarged glands, joints, and lupus have been immensely improved, whilst discharging sinuses have cleared up and in two cases the symptoms of tuberculous meningitis associated with tuberculous peritonitis entirely disappeared. The full results of this large number of cases treated by tuberculin will be published in due course. On the other hand, I have treated 16 cases of early phthisis, four of which were associated with hæmoptysis and all of which showed tubercle bacilli in the sputum, with distinctive physical signs at one apex, with the tuberculin prepared from a pure culture of bovine tubercle (kindly supplied to me by Professor Calmette of Lille). These cases are still under treatment, but up to the present many of them have shown marked improvement, with total disappearance of physical signs. It is too soon yet to speak of the final results of treatment, but I hope to publish them after one year. My tuberculin should only be used in early cases and, if possible, in conjunction with open-air or sanatorium treatment. The directions and dosage issued by the Clinical Research Association should be strictly adhered to if good results are to be obtained.

With a view to produce immunity against human tubercle in children, especially in those who have been exposed to infection from a consumptive father or mother, I have lately been working with the serum of tuberculous cattle. I have purchased several dairy cows suffering from tuberculosis of the udder and have obtained, with the kind coöperation of Professor H. E. Annett, a large amount of the serum of these cows. This serum has been very carefully sterilised and injected into guinea-pigs without any ill-effects. I believe that the serum of a cow which has suffered from bovine tuberculosis will confer such immunity when injected into a child as will suffice to protect him against an attack of human tuberculosis. Considering the large number of children who are attacked by phthisis pulmonalis as the direct result of contact with a consumptive parent a protective serum would

be an immense step in the direction of stamping out consumption. In any case, the serum is quite harmless and will only be used with the full consent of those parents whose children have been exposed to infection.

METHOD OF TREATMENT.

It is preferable (though not necessary) that the patient should stay in bed a few days before and after the first injection. The temperature and pulse should be noted every four hours before treatment and if not above 100° F. at any time the first injection of 0·0001 milligramme may be given under the skin with, of course, the strictest aseptic precautions. The temperature and pulse should be taken every two hours afterwards for 24 hours and then every four hours for 48 hours more. If any reaction is going to take place the temperature will rise up to 100° or 101° within the first 12 hours or even later; but experience has shown that if the injections are commenced with such a small dose and slowly and gradually increased no reactions follow and beyond an occasional slight headache or feeling of sickness no disagreeable symptoms are observed. In fact, many patients visit the consulting-room for their injections every week and continue their ordinary duties in the interval without any personal inconvenience. The second injection of 0·0002 milligramme is given after an interval of one week, provided no reaction has followed the first injection, in which case the first injection is repeated and then doses (in milligrammes) in the following order: 0·0004, 0·0005, 0·001, 0·002, 0·0025, 0·003, 0·004, 0·005, 0·0075, and 0·01 (maximum dose), making in all 12 injections. If the patient requires further injections the last injection of 0·01 milligramme is repeated for a few more doses but that dose is never exceeded. After the first two or three injections the patients feel better, the temperature drops to normal, the appetite is improved, and there is a feeling of general improvement. Not even the slightest bad effect has been observed from the injections, but of course great care must be exercised in the technique and a careful watch must be kept on the doings of the patient during the course.

Many of us had experience of the tuberculin introduced to the profession by Professor Koch 16 years ago. It was used in a great many cases of phthisis and other forms of tuberculosis without discrimination, but it was soon found that the most marked effects of the tuberculin were produced by injecting it in cases of lupus. I well remember, after obtaining it with great difficulty, injecting several cases of lupus. The reaction was terrific, and from notes of one of my cases I find that the temperature ran up to 105°, the pulse 140, whilst the inflammatory reaction on the lupus itself was most intense. The patient complained of a hot, parched, burning sensation all over his body—in fact, felt he was going to die. In the course of five days he developed acute tuberculous meningitis and died within a week. Although I had no other fatal cases yet in most of them the reaction was acute and in some alarming. In four cases of phthisis in which I used it the patients were made rapidly worse; in fact, the effects were so serious that the remedy was very quickly dropped by the profession. We now know that the only fault of the tuberculin was its dosage. It was a powerful remedy and too large a dose was administered without the slightest scientific knowledge as to its action. At the present time the effects of tuberculin are produced by the administration of minute doses with careful observation as to the effects of each dose. The tuberculin is slowly increased in strength, thus gradually immunising the patient to it until by degrees a maximum dose of $\frac{1}{100}$th part of a milligramme is administered.

In the year 1897 on the introduction of Koch's new tuberculin, or tuberculin R., I made a series of observations on 18 cases of phthisis and recorded the results in THE LANCET at that time. The dosage commenced with $\frac{1}{1000}$th milligramme and was slowly raised to 1 milligramme as a maximum dose. Even that dosage was found to be too high and I think the present method is scientifically correct. The results of that series of cases were not encouraging. In only one case of phthisis could we see any definite improvement. The remaining 17 cases were not in any way improved but they were certainly not in the slightest degree damaged by its use. Since then I have used Koch's tuberculin R. in a large number of cases of phthisis, and I came to the conclusion a year ago, after a very careful examination of its effects, that it was not beneficial in phthisis. But the same cannot be said when we inject Koch's tuberculin into other forms of tuberculosis. In fact, as I have mentioned before, the injection of this tuberculin has a most marked and lasting curative effect, so much so that now it is my routine practice to give every suitable case of surgical tuberculosis injections of Koch's tuberculin and also every case of early phthisis injections of tuberculin prepared from bovine sources. The results are most encouraging and in some cases wonderful, and I am convinced that the treatment of the future of tuberculosis in all its forms will be by the physician rather than by the surgeon.

I now proceed to relate the particular cases in which tuberculin has been used, and although it is impossible to enter into details in this short paper yet I will endeavour as far as possible to classify the different groups of cases with their results.

PHTHISIS PULMONALIS.

At the present time there are 16 cases of phthisis pulmonalis under treatment by injections of bovine tuberculin. They are all adults, nine women and seven men, and in each case the disease is in the first stage according to the classification of Turban—that is, involving one lobe of one lung, or both apices limited to above the clavicle and spine of the scapula. In ten of the cases tubercle bacilli were found; in the other six cases no expectoration could be obtained.

The following is a brief account of the 16 cases:—

CASE 1.—Male, aged 23 years. History of hæmoptysis six months ago; constant cough and slight expectoration. Tubercle bacilli found. He had been steadily losing weight and has even now a typical cachexia. Temperature 100° F. at night. He has had ten injections of tuberculin, commencing with 0·0001 milligramme and rising to 0·01 milligramme. He left the hospital after three months' treatment, having gained 10½ pounds and with total disappearance of all physical signs, cough, and expectoration, and with a normal temperature. He has since been seen on several occasions and remains well and at work. He had only early infection of the left apex.

CASE 2.—Male, aged 31 years. Early phthisis with consolidation of right apex. Tubercle bacilli found in sputum; profuse night sweats and loss of flesh for five months. The usual injections were commenced four months ago with the result that steady improvement has followed. Physical signs have practically disappeared and the man is feeling very much better.

It is, of course, too early yet to give a final verdict, but in this particular case the tuberculin has had a marked effect.

CASE 3.—Female, aged 31 years, with marked physical signs of tuberculosis at both apices. She is of rather frail and delicate constitution but there is no family history of tubercle. She had tried sanatorium treatment for two months but had to give it up on account of it not agreeing with her—in fact, she lost weight whilst in the sanatorium. Injections were started in July last and she has altogether had 14 injections at intervals of one week. Her cough has entirely disappeared, expectoration is almost *nil*, temperature is normal, and she has gained 20 pounds.

CASE 4.—Male, aged 17 years, with active tubercle of the left upper lobe. He was losing weight steadily and had a troublesome and continued cough with expectoration which contained tubercle bacilli. He has had nine injections and is steadily progressing towards recovery.

CASE 5.—Male, aged 23 years, with active phthisis of the right apex, temperature ranging to 101° F. with persistent cough, especially at night. He had hæmoptysis six weeks before treatment. He has had ten injections of tuberculin, has gained 17 pounds, and is steadily improving.

CASE 6.—Female, aged 29 years, with fairly extensive pulmonary tuberculosis and laryngitis. The cough and dyspnœa were very urgent. There was considerable ulceration of the larynx and she had great distress and pain in swallowing, especially hot liquids. Although it was not a case that one would select for treatment yet it was thought that something ought to be done to relieve the distressing laryngeal symptoms. She had altogether seven injections of tuberculin but I regret to say without any good effect whatever, so that they were discontinued. She died two months afterwards and at the necropsy there was considerable destruction of both lungs, with serious involvement of the larynx and extensive secondary ulceration of the intestines, a condition that I invariably find where the larynx is much involved. This case strongly supports the view which I hold—namely, that tuberculin can only be useful in a localised infection of tuberculosis. In other cases it has no immunising effects whatever, and I am rather inclined to believe, although I am not certain, that it may intensify the tuberculous process.

CASE 7.—Female, aged 19 years, with early phthisis at the left apex. She was very thin on admission and had been steadily going down-hill for the last 12 months. Cough troublesome; expectoration profuse in the morning. Under tuberculin she improved rapidly, and in 13 weeks she gained 24 pounds and left the hospital apparently quite well. Tubercle bacilli were never found in her expectoration, although the physical signs of phthisis were quite pronounced.

CASE 8.—Female, aged 26 years, a nurse, contracted phthisis probably from her husband who died from it. She had well-marked signs of tubercle over the whole of the left lobe in front and behind, constant cough and expectoration, progressive loss of weight and profuse night sweats. Tubercle bacilli were found in her expectoration and she readily consented to inoculation. After 13 injections she made a complete recovery. Physical signs were greatly diminished, although there was still some diminished resonance over the affected lung; tubercle bacilli disappeared from her sputum, her cough and night sweats entirely disappeared, and she gained 28 pounds in weight.

This I consider one of the most successful cases of the series.

CASE 9.—Female, aged 26 years, with marked phthisis at the left apex. She had been losing ground for the last 12 months, with cough,

expectoration, and night sweats. She made application for admission to a sanatorium but was declined on the ground that her case was not sufficiently early. She has up to the present time had six injections of tuberculin. Her cough has practically gone, physical signs much less active, and she has gained nearly a stone in weight.

The case is still under treatment and I feel no doubt that she will eventually make a complete recovery.

CASE 10.—Man, aged 40 years, in Stage 1 of the disease. Tubercle bacilli found. Has had 11 injections and is steadily gaining weight.

CASE 11.—Male, aged 50 years. Phthisis involving both apices, physical signs most marked behind. He has a very distressing cough; has had two attacks of hæmoptysis. Under tuberculin he has made a little improvement but he does not seem to possess much natural resisting power so that it is rather difficult to produce immunity.

Although the patient is a little better I am not satisfied that he is making any great headway and I rather think of discontinuing the treatment.

CASE 12.—Male, aged 31 years, with active tubercle at the right apex. Had a severe hæmoptysis two months ago when he lost a large quantity of blood. Tubercle bacilli are present and it looked as if he was going to develop acute tuberculosis of both lungs. Things, however, settled down after two weeks' rest and tuberculin was commenced. From the very first injection he commenced to improve, his appetite returned, the cough became less, expectoration not tinged with blood and diminished, night sweats disappeared, and he gained over 18 pounds in weight. At the end of 12 injections he was transferred to our sanatorium where his recovery was completed and he left that institution two months ago with his disease completely arrested.

I examined this patient a few days ago and found him continuing his work with no symptoms at all to cause him any inconvenience. He has still retained all his weight and there are no tubercle bacilli found in the sputum.

CASE 13.—Male, aged 37 years, with tuberculosis of both apices with old pleurisy at the right base. He had been losing weight for two years and has not been able to follow his employment for that time. He came into hospital for the purpose of having injections and has progressed extremely well after ten injections of tuberculin. He has greatly improved, has gained weight, and cough has disappeared.

The case is still under treatment and although I do not hope for cure yet there is certainly great improvement.

CASE 14.—Male, aged 36 years. Tuberculosis at right apex, erratic temperature, quick pulse, night sweats, and emaciation. He was treated for one month on ordinary hygienic principles, with complete rest in the open air—such as we have in Mill Road Infirmary—which had a good effect. Injections were commenced four months ago and although he has only had 10 yet he appears to be greatly benefited and expresses himself as being quite a different man.

I think in this case the disease will be arrested.

CASE 15.—Female, aged 21 years, two sisters having died from phthisis within the last three months. She had only complained for six weeks of cough and expectoration. Temperature was high at night; pulse 120, with progressive emaciation. Under treatment she has made wonderful recovery, although no marked improvement was observed until after the seventh injection. She has now had 13 injections. Her temperature is normal at all times; pulse 90. She has gained 18 pounds in weight and says she is better than she ever was in her life.

The physical signs in this case were limited to the left apex but were evidently of an acute and progressing character. The girl herself had practically no resisting power, consequently she would have very soon been destroyed by the tubercle bacilli. This is an example of the excellent effects of tuberculin.

CASE 16.—Female, aged 19 years, strong, sturdy physique. Hæmoptysis three months ago, temperature raised one degree each night, and the physical signs limited to the right apex above the clavicle; in fact, a typical example of Class I. in Turban's classification. There were no tubercle bacilli found. After 12 injections of tuberclin no signs or symptoms could be detected. She has gained 8 pounds, cough has disappeared, and she has left the hospital apparently cured.

From this series of cases of phthisis pulmonalis, the results of which I will publish in the course of another 12 months, I am convinced beyond any shadow of doubt that a tuberculin prepared from bovine sources has a most marked and curative effect in tuberculous affections of the lung, but my experience teaches me that, first, the patient must have a certain amount of natural resistance to the organism. If this is not present at the time of observation endeavours must be made by feeding and general tonics to raise the resistance somewhat before the tuberculin treatment is commenced. If it is found impossible with the aid of pure air, nutritious food, blood tonics, &c., to improve the resisting power I have come to the conclusion that tuberculin itself will not be of much avail. Secondly, the tuberculous infection must be limited either to one lobe of a lung or to two small areas of two lungs. If the disease has progressed to the formation of cavities and general constitutional infection, tuberculin has little or no lasting effects, although it improves the patient for a time. Thirdly, the age of the patient is of great importance; the younger the patients the more readily do they respond to tuberculin, and I have found that after the age of 50 it is very difficult to produce good effects with it, although it is quite common, of course, to see patients of that age recover from an early infection of tubercle of the lungs. Fourthly, if there is any concurrent disease, such as kidney trouble, tuberculin seems to have little or no effect.

I intend to continue the treatment for another 100 cases and I will hope to have the pleasure of reporting to you on a future occasion on the total results. At present I am quite certain that every early case of phthisis under suitable conditions should be inoculated with bovine tuberculin.

TUBERCULOUS GLANDS.

Twenty-three cases of tuberculous glands of the neck and other parts of the body have been treated with tuberculin, with, in many instances, the most extraordinary results. Several cases of extensive disease, especially when localised in the neck, have completely recovered. The glands are noticed first of all to become softer, the peri-adenoid tissue seems to become more flaccid and less inflammatory, and the glands themselves rapidly diminish in size to vanishing point. I have noticed, however, that where there is a tendency to suppuration the tuberculin has no good effect and there is nothing for it but either to incise the glands or remove them altogether. In two instances of inflammatory glands where suppuration was threatening tuberculin seemed rather to increase the swelling than diminish it, so that from my experience of treating glands I would say that tuberculin is only indicated where the glands are enlarged and not caseating or suppurating.

LUPUS.

Twenty-four cases of lupus have been treated in the hospital, and it is here that the very best results of tuberculin are obtained. All stages of the disease seemed to respond rapidly to injections, and in all the cases in which I have used tuberculin, without any other treatment such as scraping or medication, the ulcerated surface has healed with a firm cicatrix and in only two instances so far has the disease recurred.

TUBERCULOUS JOINTS.

Twenty-seven cases of tuberculous joints, mostly of a chronic or subacute variety, have been inoculated; 15 diseases of the knee, 8 of the hip, and 4 of other joints. The cases where the best results were obtained were those in which there was some suppuration or sinus directly leading down to tuberculous disease. In the great majority of cases the suppuration ceased first and then the sinus closed. In cases of pulpy disease of the joints there was in many instances marked diminution of the size of the joints with absence of inflammation and more movement. I have not yet seen any case where fixed or ankylosed joints have been benefited.

TUBERCULOUS PERITONITIS.

Eight cases of tuberculous peritonitis have been treated; 4 of the plastic or dry variety and 4 associated with fluid in the abdomen. Every one of the cases has recovered and all have been discharged well after 12 injections each of tuberculin. I consider that tuberculin is an absolute specific in cases of tuberculous peritonitis where the disease is confined to the abdomen.

TUBERCULOUS MENINGITIS.

This, the most terrible of all diseases that we are called upon to treat, may possibly be deprived of its terrors by timely inoculation of tuberculin. Unfortunately, as a rule, in hospital practice the cases do not come until the disease is well advanced or where there is some intercurrent tuberculous lesion. In two cases of apparent tuberculous meningitis with all the classical signs the symptoms entirely disappeared after four injections of tuberculin and both children made rapid recovery. In other two instances tuberculin had no effect and the children died. Of course, it is impossible to be sure that the first two cases were of a tuberculous nature, as tubercle bacilli could not be recovered by lumbar puncture, but I have no doubt myself that they were.

TUBERCULOUS ABSCESSES AND SINUSES.

Eighteen cases were treated. In 13 of them no definite good results were obtained as they were of a chronic nature, but in five cases the sinuses closed and the patients soon got fat and apparently well.

The whole of these 104 cases of surgical tuberculosis have been, of course, treated by Koch's tuberculin R., which, as you know, is manufactured from tubercle bacilli obtained

from human sources and exactly in contra-distinction to the cases of phthisis which were treated by a bovine tuberculin. In summing up the treatment of surgical tuberculosis I have found that if there is any waxy disease present the tuberculin has no effect, so that it is important to find out before treatment is commenced, especially in chronic cases, the condition of the liver, spleen, and kidneys. A large number of similar cases will be placed under treatment during the next few months and I hope to be able to record similar satisfactory results.

I would strongly advocate the treatment to be carried out by practitioners on their patients in their own homes. If careful precautions are observed there is no risk or danger whatever, and, from my experience, the tuberculin is carefully prepared and standardised by the Clinical Research Association at a moderate cost.

The following is a summary of the cases treated by Koch's tuberculin: glands in the neck, 23; lupus of the face, 24; joints, 27; peritonitis, 8; meningitis, 4; tuberculous sinuses, 18; total 104. Number of cases treated by tuberculin prepared from bovine sources: phthisis pulmonalis, 18.

ON A CASE OF ACUTE POLIOMYELITIS ASSOCIATED WITH A DIPLOCOCCAL INFECTION OF THE SPINAL SAC.

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WHILST it has been recognised for many years that an infective origin is probable for certain nervous affections which have a paralysis of acute onset as their chief clinical manifestation, such as acute poliomyelitis, acute disseminated myelitis, and Landry's paralysis, the evidence indicating the mode of causation has been hitherto of a circumstantial rather than a direct nature. In the course of an investigation into the case which we shall now describe we have obtained, however, further evidence of an important kind, inasmuch as having identified a micrococcus in the spinal fluid withdrawn during life from a boy with symptoms of acute poliomyelitis we have succeeded in producing an ascending motor paralysis in the rabbit, after a prolonged period of incubation, by inoculating this fluid into the subdural space. On the death of the experimental animal we have been able to demonstrate in the cerebro-spinal fluid a micrococcus similar to that seen in the fluid from the human case; and further, by similarly inoculating another rabbit with an emulsion of cerebro-spinal substance and fluid from the first experimental animal we have succeeded in reproducing a motor paralysis, again after a somewhat prolonged period of incubation, and again associated with the presence of the micrococcus in the spinal fluid. But whilst we have succeeded thus in obtaining direct evidence of the infective nature of the illness and of its association with a certain micro-organism, our evidence is incomplete bacteriologically, since we failed to obtain the micrococcus in culture on artificial media, and so are unable to give a complete description of it.

THE CLINICAL HISTORY OF THE CASE.

The patient was a slightly built schoolboy, aged 13½ years, and of rather delicate appearance. The history of the onset of his illness was as follows. He was apparently in his usual health on Nov. 11th, 1906. On the evening of the next day he complained of shooting pains in the thighs and across the abdomen at about the level of the anterior superior iliac spines. He was seriously ill during the night and the following day with severe abdominal pain and quiet delirium. On the 13th he was free from delirium and felt better generally, but during the night he suffered again from sharp pains in the legs, which were increased by movement. On the morning of the 14th the patient was unable to leave his bed because of an almost complete loss of power in both legs. By the 16th he had become quite helpless and, although he could use his arms to some extent, was unable to move himself in his bed. About this time his friends noticed that he was unable to cough. He was admitted into the Middlesex Hospital on the 19th. There was nothing in either the family history or the previous personal history of the patient which appeared to have any direct bearing on his present illness. He was one of a family of five children; the other four were in good health. The patient himself was described as having been always rather delicate and nervous; when younger he had suffered from scarlet fever, measles, chicken-pox, and whooping-cough, and when five years old had been treated at the hospital for rickets and bronchitis. He had had "a fit" on two occasions, once at the age of two years and again two years ago; latterly his general health had been fairly good and there was no history of any special indisposition immediately preceding the present illness.

On his admission into hospital the patient lay helpless in his bed. His complexion was somewhat dusky, his voice was feeble, and there were frequent toneless, non explosive efforts at coughing. The respiration-rate was 40 and the pulse-rate was 100 and regular. The temperature on admission was 99° F., but during the first ten days after admission it ranged between 100° and 103° in consequence of a broncho-pneumonia which was probably secondary to collapse of the left lung. The head was drawn somewhat towards the left side and was moved with difficulty because of muscular weakness, the patient being unable to lift it from the pillow. There was no evidence of any paralysis of the facial, lingual, or pharyngeal muscles; the movements of the eyes were not impaired, the pupils were normal in size and as to movement, and the conjunctival reflex was natural. Both lower limbs were in a condition of complete flaccid paralysis except for some flickering muscular contractions which could be seen on attempts to flex or extend the toes of the right foot. And, except the right peroneal muscles, which responded feebly to strong galvanic stimulation, the paralysed muscles did not react to either faradic or galvanic currents. The plantar, patellar, and cremasteric reflexes were not obtainable. Respiration was entirely thoracic in character; there was no movement of the abdominal muscles in respiration, nor was there any visible contraction of them when the patient attempted to cough or to lift his head from the pillow. The diaphragm was apparently paralysed completely. The patient was unable to turn to either side, but could arch his back slightly. The abdominal and epigastric reflexes were not obtainable. The sphincters were not apparently impaired. The thoracic movements were equal on either side but were distinctly deficient. On auscultation of the front of the chest a fair amount of air could be heard entering the lungs, but a complete examination of the chest was not made at the time because of the severe respiratory distress which accompanied the least disturbance of the patient. On subsequent examination, however, it was evident that there had been some considerable collapse of the lungs, and especially on the left side, as a result of paralysis of the diaphragm and intercostals. The range of movement of the arms was as normal, but the muscular power was notably weak. The extensor muscles reacted to strong faradic currents, the flexors reacted normally. Tactile sensibility and sense of temperature were normal everywhere. There were no abnormal sensations nor was there any exaggerated surface tenderness. The organs of special sense were apparently healthy.

During the first ten days when the patient was under observation his condition was one of much danger because of a broncho-pneumonia which was apparently related to the collapse of the lungs which had followed the paralysis of some of the respiratory muscles. But on Nov. 30th the temperature fell suddenly to normal and the patient's general condition improved quickly thereafter. Some recovery of power in the muscles of the arms, the shoulders, and the neck was evident early in December, and by the end of the year the patient had apparently free use of his arms, could turn readily from side to side in bed, and could raise himself to a sitting posture. Some further improvement followed, but when the patient was shown at a meeting of the Clinical Section of the Royal Society of Medicine on Dec. 13th, 1907, he was still completely crippled so far as any use of his lower limbs was concerned.

The evolution and progress of the symptoms in the case were in complete accordance with the recognised clinical features of acute poliomyelitis, and there was little difficulty

in arriving at the conclusion that the patient was suffering from one of the less common types of this affection, the motor nerve-supply of almost the whole muscular system of the trunk as well as that of the limbs being affected in greater or less degree.

THE BACTERIOLOGICAL INVESTIGATION.

Four specimens of the patient's cerebro-spinal fluid were obtained by lumbar puncture on the following dates: Specimen I. on Nov. 22nd, 1906; Specimen II. on Dec. 14th, 1906; Specimen III. on March 25th, 1907; and Specimen IV. on April 17th, 1907. The fluid was clear when withdrawn, but on standing threw down a small greyish sediment which microscopically consisted of lymphocytes.

Cytological examination of the cerebro-spinal fluid.—The deposit obtained on centrifugation of the fluid apparently consisted entirely of mononuclear cells (lymphocytes); no polymorphonuclear leucocytes were seen. In this respect, it may be noted, the fluid resembled that obtained by Geirsvold[1] from 12 cases occurring during an epidemic of acute poliomyelitis which happened in Norway in 1905. Geirsvold found that the deposit from the spinal fluid in his cases consisted chiefly of mononuclear cells and very rarely contained any polymorphonuclear leucocytes.

Bacteriological examination of the cerebro-spinal fluid.—A micrococcus with an obvious arrangement in pairs was recognised in stained preparations of the fluid drawn off by lumbar puncture on Nov. 22nd and on Dec. 14th, but could not be found in the specimens of the fluid which were drawn off on the two later dates. In most of the cover-glass preparations made from the two earlier specimens of fluid a few widely scattered diplococci could be distinguished unmistakeably; in one or two observed instances two pairs were grouped as tetrads. The cocci were of comparatively large size and in this respect were equally comparable with micrococcus pneumoniæ; there was some indication of a capsule, but this was not so distinct as it was with the diplococci which were found in the cerebro-spinal fluid of the experimental rabbits. The diplococci were always found free in the fluid, no intracellular forms occurred. We were unable to obtain a culture of this diplococcus on artificial media; media of every description were inoculated with the fluid and incubated both aerobically and anaerobically, but in no instance was growth of any kind obtained.

Animal experiments.—Altogether nine rabbits were inoculated with cerebro-spinal fluid obtained from the case, seven being inoculated intracranially, one intraperitoneally, and one subcutaneously. Sundry other rabbits were inoculated intracranially with an emulsion of cerebro-spinal substance and fluid from certain of the first series of experimental animals. The intracranial inoculations were carried out by means of a fine hypodermic syringe through a small trephine opening in the frontal region; in the case of the first series of animals a cubic centimetre of cerebro-spinal fluid from the patient was injected into the subdural space. One animal (Rabbit 4) died as the direct result of the operation; all the others apparently recovered quickly and completely from the immediate effects of the operation. The results of our experiments were as follows.

Rabbit 1, inoculated from the specimen of spinal fluid drawn off on Nov. 22nd, was found dead on the twenty-second day afterwards and diplococci similar to those identified in the patient's fluid were found in its spinal sac. This animal had not been under close observation during the week which preceded its death and consequently we are unable to say whether there had been any paralyses.

Two rabbits (Nos. 2 and 3) were inoculated with an emulsion of the cerebro-spinal substance and fluid of Rabbit 1. Rabbit 2 died on the eleventh day after the inoculation and Rabbit 3 was killed under chloroform on the following day. Both animals were apparently quite well up to the time of death; no cause for the death of the former could be found, and the appearances in each after death were quite normal, nor were any micro-organisms found in the cerebro-spinal sac of either.

Two rabbits (Nos. 4 and 5) were inoculated with the specimen of fluid drawn off on Dec. 14th. Rabbit 4 died within 24 hours from an intracranial hæmorrhage the result of the operation. Rabbit 5 remained apparently well for more than six weeks, but on the fiftieth day after inoculation it was noticed that the hind limbs were partially paralysed. Two days later the hind limbs were completely paralysed and the fore limbs partially paralysed; the animal meanwhile had been eating well and, except for the paralysis, was not obviously ill. Death occurred on the fifty-third day after the inoculation, and a fair number of diplococci were found in the animal's cerebro-spinal fluid.

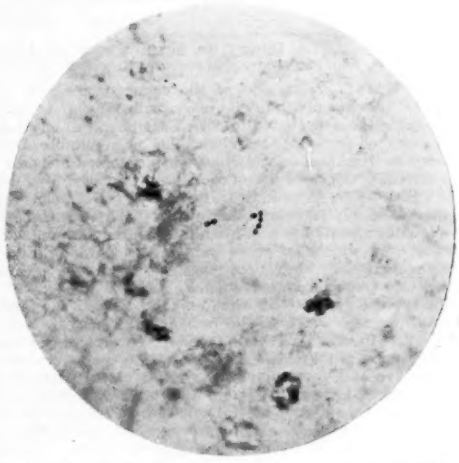
Two rabbits (Nos. 6 and 7) were inoculated with an emulsion of the cerebro-spinal substance and fluid from Rabbit 5. Of these, Rabbit 6 was killed under chloroform on the forty-first day after the inoculation, the animal being then apparently healthy, and no diplococci could be found in the cerebro-spinal sac. Rabbit 7 was found to have complete paralysis of the hind limbs on the forty seventh day after the inoculation, followed rapidly by a paralysis of the fore limbs which was very plainly obvious on the forty-ninth day. The animal was killed on the fiftieth day after the inoculation and diplococci were found in the cerebro-spinal sac.

Rabbits 10 and 11 were inoculated with an emulsion of the cerebro-spinal fluid and substance from Rabbit 7. One died on the fourth day after inoculation, but the cause of death could not be ascertained; the other did not suffer from any apparent ill-effects and was alive and well four months afterwards.

Diplococci had been seen in the specimens of spinal fluid from the patient from which these rabbits had been inoculated, but none were seen in the specimens withdrawn on March 25th and April 17th, 1907, with which the remaining animals (Rabbits 8, 9, 12, 13, 14, and 15) were inoculated, and none of these animals suffered apparently from the inoculation.

In the case of each animal that either died naturally or was killed under chloroform a careful examination was made of stained specimens of the cerebro-spinal fluid, the heart blood and the juice from the spinal cord, the spleen, and other organs, but in no case were any diplococci found except in those instances in which we have noted its presence in the cerebro-spinal fluid. Culture media of the most varied description were inoculated also from the cerebro-spinal fluid, the heart blood, and various tissue juices in every case. But except for occasional growth, which was obviously due to accidental causes, all the media used remained sterile on incubation; and, in particular, no growth of any kind was obtained on any of the media inoculated with the cerebro-spinal fluid from Rabbits 1, 5, and 7, in which we had been able on microscopical examination to demonstrate clearly the presence of the diplococci.

Except in the case of the rabbit which died from an accident of the inoculation operation, and Rabbits 14 and 15, which died from coccidiosis, no macroscopic morbid change was found after death—in every case the meningeal membranes appeared perfectly natural and healthy, nor was any excess or other abnormality of the cerebro-spinal fluid noticed.



Microphotograph showing cocci in cerebro-spinal fluid of Rabbit No. 1 dying on twenty-second day after inoculation.

Unfortunately, no adequate histological examination of the spinal cords of the rabbits was made. Small portions of the cervical, dorsal, and lumbar cord from Rabbit 7 only were

[1] Geirsvold: Tidsskrift for den Norske Laegeforening, No. 20, 190

examined, but neither any change in the ganglion cells when stained by Nissl's method nor any perivascular change could be detected.

The diplococci, alike in the patient's cerebro-spinal fluid and in that from the rabbits, stained well and deeply with Loeffler's blue, but we were not able to detect any specimens of the micro-organisms in films of the fluid which had been stained by Gram's method, with a counterstain, and so we are unable to state the reaction of the diplococci in this respect. In the rabbits' spinal fluid the diplococci were very sparsely scattered, they were grouped in pairs, occasionally in tetrads, and in one instance (see Figure) a chain of four cocci was noticed.

The results of our inoculation experiments may be conveniently recapitulated in tabular form.

TABLE OF ANIMAL EXPERIMENTS.

Specimens of spinal fluid.	*Series I.*—Animals inoculated with cerebro-spinal fluid from patient.	*Series II.*—Animals inoculated with an emulsion of the cerebro-spinal substance and fluid from rabbits of Series I.	*Series III.*—Animals inoculated with an emulsion of cerebro-spinal substance and fluid from rabbit of Series II.
Specimen I., drawn off on Nov. 22nd, 1906. *Contained diplococci.*	Rabbit 1.—Intracranial inoculation; died on twenty-second day afterwards. *Diplococci present in cerebro-spinal fluid.*	Rabbit 2.—Inoculated on Dec. 14th from Rabbit 1; died on Dec. 25th; cause of death not ascertainable; result of experiment negative. Rabbit 3.—Inoculated on Dec. 14th from Rabbit 1; killed on twenty-sixth day, apparently healthy.	—
Specimen II., drawn off on Dec. 14th, 1906. *Contained diplococci.*	Rabbit 4.—Intracranial inoculation; died from accident within 24 hours of operation. Rabbit 5.—Intracranial inoculation; marked paralysis of hind limbs on fiftieth day after inoculation; partial paralysis of forelimbs on fifty-second day; death on fifty-third day. *Diplococci present in spinal fluid.*	Rabbit 6.—Inoculated on Feb. 6th, 1907, from Rabbit 5; killed under chloroform on forty-first day. Result of experiment negative. Rabbit 7.—Inoculated on Feb. 6th, 1907, from Rabbit 5; complete paralysis of hind limbs and partial of forelimbs on forty-ninth day; killed on fiftieth day. *Diplococci present in cerebro-spinal fluid.*	Rabbit 10.—Inoculated on March 27th from Rabbit 7; died on fourth day after inoculation cause of death not ascertainable. Rabbit 11.—Inoculated on March 27th from Rabbit 7; alive and well four months afterwards.
Specimen III., drawn off on March 25th, 1907. No diplococci seen in cover-glass preparations.	Rabbit 8.—Intracranial inoculation; killed on twenty-first day; result of experiment negative. Rabbit 9.—Intracranial inoculation; alive and well four months afterwards.	—	—
Specimen IV., drawn off on April 17th, 1907. No diplococci seen in cover-glass preparations.	Rabbit 12.—Intracranial inoculation; died on July 2nd from coccidiosis. Rabbit 13.—Intracranial inoculation; alive and well three months afterwards. Rabbit 14.—Intraperitoneal inoculation; died on May 9th from coccidiosis. Rabbit 15.—Subcutaneous inoculation; died on July 12th from coccidiosis.	—	—

AS TO THE INFECTIVE ORIGIN OF SOME CASES OF ACUTE POLIOMYELITIS.

Whilst there is, as we said at the commencement, a considerable volume of indirect or circumstantial evidence which indicates a probable infective origin for, at any rate, some cases of acute poliomyelitis, the only reliable direct evidence as to causation which has been obtained hitherto is that derived from the work of Geirsvold,[2] to which we will refer a little later. The indirect evidence as to the causation of this affection is comprised in records of outbreaks of illness, either limited to a single family or of widely epidemic character, in which an acute paralysis, apparently due to acute poliomyelitis, has been either a prominent primary feature or a frequent consequence.

As a typical example of what may be termed the family outbreak we may refer to the instance recorded by one of us (W. P.)[3] in which an entire family of seven children were attacked by a mild febrile disorder which was followed in between five and seven days by marked motor paralysis in three cases, by muscular tremors and temporary strabismus in another case, and by general muscular tremors in a fifth case. Other outbreaks of similar character have been recorded and most of them are referred to in Dr. Farquhar Buzzard's Goulstonian lectures for 1907 on Certain Acute Infective or Toxic Conditions of the Nervous System.[4]

Epidemic outbreaks of an illness of which acute poliomyelitis was a prominent feature occurred in Norway during the years 1903, 1904, 1905, and 1906, and have been recorded by Geirsvold[5] and by Harbitz and Scheile.[6] Geirsvold, writing in 1905, states that 437 cases of the disease, with 69 deaths, had occurred in Norway during the year. The disease was of an epidemic character, spreading from farm to farm over the whole country. Frequently preceding, sometimes coincidently with, a local outbreak of cases of acute poliomyelitis there were cases of illness of a milder or abortive character. In these milder cases, in which obvious illness lasted for from one to four days, the principal symptoms were those of fever, with rigors, sore throat, sweating, and sometimes evidence of some meningeal irritation. In this type of case paralyses did not occur as a rule but Geirsvold notes that in some of them a progressive paralysis, sometimes terminating fatally, developed after apparent convalescence and after the patient had returned to work, and comments on the likelihood of the mild antecedent illness being overlooked in such cases of late paralysis. In the course of the epidemic children and adults were attacked and whilst some types of the disease resembled in their broad features cases of epidemic cerebro-spinal meningitis caused by diplococcus intracellularis of Weichselbaum a consideration of the epidemic as a whole leaves no doubt as to the different specific nature of the infection.

Dealing next with the direct evidence as to the infective nature of these cases of acute poliomyelitis, one has only to refer to a recent review by Carl Looft[7] of the Bacteriology of Acute Anterior Poliomyelitis to show how contradictory and generally unsatisfactory most of the evidence which has hitherto been brought forward has been. Thus, Harbitz and Bulow-Hansen[8] have recorded the finding of a diplococcus in the spinal fluid of a case of anterior poliomyelitis examined after death. Schultze[9] recorded the finding of the meningococcus in a single case, and in a second communication[10] recorded the finding of diplococci in two other cases, one of which, however, appears to have been of a tuberculous nature. Concetti[11] has published the results of

[2] Geirsvold: Ibid.

[3] W. Pasteur: Transactions of the Clinical Society of London, vol. xxx.

[4] F. Buzzard: THE LANCET, March 16th (p. 705), 23rd (p. 785), and 30th (p. 863), 1907.

[5] Geirsvold: loc. cit.

[6] Harbitz and Scheile: The Journal of the American Medical Association, vol. xlix., 1907; also Pathologisch-Anatomische Untersuchungen über Akute Poliomyelitis und verwandte Krankheiten von den Epidemien in Norwegen, 1903–1906.

[7] Carl Looft: Review of Neurology and Psychiatry, 1907.

[8] Harbitz and Bulow-Hansen: Norsk. Magazin fer Liegevidenskaben, 1898.

[9] Schultze: Jahrbuch für Kinderheilkunde, Band iv., 1899.

[10] Schultze: Ziegler's Beiträge zur Pathologischen Anatomie, Seventh Supplement, 1907.

[11] Concetti: Revue Mensuelle des Maladies de l'Enfance, 1900.

the examination of the fluid removed by lumbar puncture in 10 cases of anterior poliomyelitis; nine of the cases were examined by bacteriological methods, and the pneumococcus was found in two cases and the meningococcus in a third. Looft and Dethloft[12] isolated from the spinal fluid of two cases an organism which is described as resembling Heubner's type of meningococcus. And, finally, Engel[13] obtained staphylococcus albus on media inoculated with the spinal fluid of a boy with acute anterior poliomyelitis, disease of the middle ear, and osteo-myelitis of the clavicle. To these bacteriological observations mentioned by Looft may be added the experience of Barnes and Miller[14] who found staphylococcus pyogenes citreus and staphylococcus albus in a case examined after death.

The results of bacteriological work so far are not of any particular value for the elucidation of the causation of cases of acute poliomyelitis; in some cases it is highly probable that the organism obtained on culture media came from accidental contamination during the bacteriological procedure. In other cases question arises as to clinical diagnosis, and in no case is any evidence brought forward that the organism obtained in culture had any causative relationship to the disease.

The results obtained by Geirsvold, on the other hand, were consistent and afford the strongest presumptive evidence that he was successful in isolating a diplococcus which stood in causative relationship to the disease which was under investigation. Geirsvold examined the cerebro-spinal fluid obtained either by lumbar puncture during life or after death from cases of the epidemic disease which has recently prevailed in Norway. It does not appear how many cases were examined, but in 12 cases Geirsvold obtained in pure culture a diplo- or tetro-coccus which readily produced chains of four or six elements when growing in nutrient broth.

On solid media the growth of the organism was slow at first and scanty, resulting in sparsely scattered, small, greyish colonies having the appearance of dewdrops, but in subsequent subcultures a more vigorous growth was obtained. After growing for some time on agar the colonies acquired a toughish consistence; in nutrient broth the growth formed a coherent sediment; in peptone water growth was scanty, and in this medium "degenerate" forms of the micrococcus were seen. Some growth was obtained on potato and in milk, the latter medium being coagulated after some days. Growth was obtained occasionally on gelatin and then the medium became liquefied. The organism stained by Gram's method. The organism was pathogenic for mice; some of the animals inoculated died within 24 hours and in some cases showed signs of muscular paralysis before death; other mice appeared to recover from the inoculation but developed paralysis later. Rabbits also were susceptible, sudden paresis of the hind limbs developing after a prolonged incubation period. Geirsvold notes that in order to obtain cultures of the micrococcus large quantities of the spinal fluid must be incubated. He very rarely obtained cultures after the tenth or twelfth day of the disease, although diplococci could be seen in the fluid withdrawn from the spinal sac, an experience which has a bearing on our own failure to obtain any growth of the organism which could be seen in spinal fluid withdrawn on about the twelfth day after the onset of illness and again later.

CONCLUSIONS.

It appears to us that Geirsvold's investigations have established beyond question the existence of a specific infective disease of which acute poliomyelitis is a frequent and prominent, but not essential, feature. And we believe that the case which we now record represents a sporadic case of the disease which Geirsvold investigated under epidemic circumstances. From the somewhat scanty information at our disposal it would appear that this specific disease has no clearly distinguishing primary features to enable one to differentiate it by its clinical symptoms from many other febrile conditions of probably infective origin which are frequently met with in practice but which may not have sufficiently distinctive symptoms to enable a definite diagnosis to be arrived at. And so whilst the serious complication of acute poliomyelitis when it has occurred has been at once recognised, the primary disease has not been differentiated hitherto but has in fact usually been altogether overlooked. That the disease is not confined to man is suggested by an epidemic of some 160 cases of what appears to have been acute anterior poliomyelitis which has been recorded by Dana,[15] and in which cases of paralysis were observed amongst lower animals in the locality in which the human cases occurred.

It would be unprofitable, again because of the insufficient information at our disposal, to attempt to discuss the exact pathology of the acute poliomyelitis which is one of the results of this infection. Neither our own experience nor Geirsvold's much more extensive investigation throws any light upon the question as to whether the affection of the nervous system is merely a casual incident of what may be termed broadly a general infection or whether, having gained an entrance into the tissues, the infecting parasite has, as diplococcus intracellularis of Weichselbaum apparently has, a special tendency to locate itself in the cerebro-spinal sac. Nor are we at present in a position to consider whether the poliomyelitis is due to a direct and localised action of the diplococci which are seen in the spinal fluid or whether it results from the action of toxins circulating in solution in the lymph or blood, which may have an affinity, such as that of the toxins of the tetanus bacillus, for nerve-cell substances. It must not be forgotten that although the diplococcus has hitherto been recognised only in the cerebro-spinal fluid there is no reason for assuming that it is specially localised in the sac of the central nervous system. We failed in the case of our experimental rabbits to obtain cultures of the organism from either the cerebro-spinal fluid or from the blood and other tissue juices, and the fact that the organism was identified in very small numbers only in the almost clear cerebro-spinal fluid in which its recognition would be comparatively easy did not preclude its existence in the blood, where its presence would be much more difficult of demonstration by merely microscopic methods without corroborative cultivation experiments.

In conclusion, we would suggest that there is not sufficient reason for assuming that acute poliomyelitis is always a result of this particular diplococcal infection. The symptoms by which acute poliomyelitis is recognised in clinical practice are the consequences of a constitutional alteration of certain cells of the central nervous system which causes an impairment of their functional efficiency. That this constitutional alteration is necessarily produced by only one specific cause appears to us to be highly improbable. We think rather that it is probable that the cell changes which result in the symptoms of acute poliomyelitis may be caused also by the toxins produced in other infective processes, and we may refer to the experience of so good an observer as Trevelyan[16] who found that out of 50 cases of infantile paralysis which he had treated the symptoms had followed immediately on measles in two cases, in one case had come on after typhoid fever, and in another case after acute rheumatic fever.

Middlesex Hospital, W.

[12] Looft and Dethloft: Medicinsk Revue, 1901.
[13] F. Engel: Prager Medicinische Wochenschrift, No. 12, 1900.
[14] Barnes and Miller: Brain, 1907.
[15] C. L. Dana: Boston Medical and Surgical Journal, vol. cxxxii., Jan. 3rd, 1905.
[16] E. F. Trevelyan: British Journal of Children's Diseases, April, 1906.

THE THERAPEUTIC USES OF NORMAL SERUM.

BY E. C. HORT, B.A., B.SC. UNIV. PARIS, M.R.C.P. EDIN.

IN THE LANCET of Dec. 21st, 1907, p. 1744, I mentioned that during the last 12 months I had been treating with most encouraging results a number of morbid conditions by the administration of normal serum. Amongst the diseases that I have treated, and am proposing to treat, in this way are the following conditions: gastric and duodenal ulcer, with and without hæmorrhage; chlorosis and other forms of anæmia; hæmophilia; purpura hæmorrhagica; tuberculous peritonitis; hæmoptysis; ulcerations of all kinds; pulmonary œdema; pneumonias, &c. In addition to these Dr. Arthur Latham has, at my suggestion, employed normal serum in a number of similar and other cases and has most kindly allowed me access to his notes.

My attention was first drawn to the subject by the work of Dr. Emil Weil of Paris on the treatment, by fresh animal serums, of hæmophilia and allied conditions, and by Dr. Perthes's observations on hæmophilia. It appears that these observers, believing that a deficiency in coagulation power was an important factor in the blood in such diseases as hæmophilia, sought to remedy this by giving an artificial supply of fibrin ferment. With this object Weil gave intravenously or subcutaneously injections of various animal

serums in doses strictly limited in quantity to avoid "inverted action" such as obtains in the analogous case of calcium salts. I found, however, that the clinical results of giving serum in this way in severe cases of hæmorrhage were, apart from hæmophilia, most disappointing. Hæmorrhage was little affected and coagulation time was not accelerated. I therefore gave much larger doses by the mouth and gave it repeatedly, and found it possible to control severe hæmorrhage in cases of purpura, acute hæmatemesis, and in cases of tuberculous hæmoptysis otherwise uncontrollable. Further, by extending the range of application I found that a most remarkable improvement in the clinical symptoms and in the condition of the blood followed in cases of many affections in no sense hæmorrhagic, such as chlorosis and ulcer without hæmorrhage. Hence, whatever value normal serum therapy may prove to have, it does not seem obviously connected with supplying fibrin ferment.

What the true explanation is must at present be a matter of speculation. It is conceivable that the administration of normal serum may affect the production of auto-anticomplement, or in some unknown way correct a disturbance of the regulating mechanism that Ritchie and others have postulated in order to explain Ehrlich's "horror autolyticus." For instance, in the paper referred to I have suggested that gastric ulcer is not a disease *sui generis* but is merely the local expression of a general blood dyscrasia at present unrecognised and that the essence of such disease may be the presence in the blood of cytolysins for gastric epithelium. The success that I have so far been able to obtain by the repeated oral administration of serum in many of these cases supports the view that it in some way affects the autolysis here supposed to cause the disease. Whatever the explanation, the exhibition of a large number of cases of different diseases treated in this way cannot fail to be of value in determining the utility of the treatment.

It will be seen that many interesting questions will arise in connexion with normal serum therapy. For instance, what share have the normal constituents of serum in the results obtained by the use of serums such as the anti-diphtheritic and the polyvalents which we now attribute entirely to the action of abnormally produced bodies? Although I am optimistic as to the effects of normal serum-therapy in various conditions, our knowledge of its action is so slight that caution must be exercised in its use, and it is desirable that methods of testing and standardising the serum with regard to its anti-autolytic, anti-hæmorrhagic, and other properties should be employed in the future. It is also important that serum should be used from a horse that has been repeatedly bled, as its activity seems to be thereby enhanced.

The results in some of my own cases have been so striking that an anonymous donor has placed at my disposal a fund for the further investigation of the action of fresh serums. I am by this means able to avail myself of the aid of two other investigators on the staff of St. George's Hospital—viz., Dr. F. L. Golla and Dr. A. J. Jex-Blake, and collateral researches are now being actively pursued in the laboratory and in the clinical wards of several public institutions. I hope shortly, therefore, to present a large series of cases of various diseases treated in this way and to indicate thereby the limit of application. Appended are notes of four cases to indicate the possibilities apparently involved.

CASE 1. *Marked anæmia.*—The patient, an unmarried woman, aged 30 years, looked very ill and anæmic. She had had poor health for three years and had twice been treated in a nursing home without benefit. She complained of obstinate dyspepsia and distaste for food, troublesome constipation and amenorrhœa, slight gastrectasis and heavily loaded tongue, and dyspnœa on the slightest exertion. There was œdema in both legs up to the hips which pitted deeply on pressure. A loud hæmic bruit could be heard and the apex beat was in the nipple line. The urine was normal and there was no enlargement of the spleen. The blood count showed 60 per cent. of hæmoglobin and a fall in red corpuscles to 2,800,000. The blood had never previously been examined. The treatment adopted was rest, simple salines, ordinary diet and serum given in milk by the mouth on the following days—Nov. 24th, 26th, 28th, and 30th, and Dec 1st, 3rd, 5th, 7th, 9th, and 11th. In three days the œdema had nearly disappeared and in a week it was entirely gone, as also were the dyspnœa and dyspepsia. The patient was driving in ten days and walking in 14 days. The blood counts were as follows:—Nov. 20th, hæmoglobin 60 per cent. and red corpuscles 2,800,000; Nov. 26th, hæmoglobin 65 per cent. and red corpuscles 3,500,000; Dec. 6th, hæmoglobin 75 per cent. and red corpuscles 4,000,000; and Dec. 19th, hæmoglobn, 85 per cent. and red corpuscles 4,560,000.

This case, then, was one in which there had been obstinate dyspepsia for three years, which had proved refractory to treatment, and which had been associated with progressive anæmia and latterly marked œdema. Coincidently with the giving of serum there was immediate improvement in all the symptoms and the patient made a rapid recovery.

CASE 2. *Tuberculous hæmoptysis.*—This was an exceptionally good test case. The patient was a man, aged 26 years, with early but rapid tuberculosis of both lungs. When I first saw him in consultation he was bleeding profusely. "Stereotyped" treatment, including calcium chloride, had been tried for three days without avail. Amyl nitrite was the first suggestion that I made. This was as unsuccessful as I have always found it to be. Serum was then given by the mouth and bowel and two doses were sufficient to arrest bleeding. There was no more bleeding of any importance for some weeks when a fresh, though much less alarming, attack occurred. On auscultation a fresh focus of infection was clearly made out. The hæmorrhage was again immediately arrested by giving serum. In the next few months, at intervals of a few weeks, fresh hæmorrhages occurred from fresh foci of infection and in each case were immediately arrested as before by serum. It is fair to add that in two of these attacks the medical man in charge had previously employed again the ordinary methods of treatment without avail. An interesting point in this case was the fact that in spite of the rapid invasion of the lungs at the beginning of treatment by serum the tendency to great improvement, apart from arrest of hæmorrhage, was in the later months manifest. This may or may not have been due to the influence of the serum given, the total amount of which was considerable.

CASE 3. *Probable gastric ulcer without obvious hæmorrhage in a chlorotic.*—The patient, a young woman, aged 20 years, had for seven years suffered from almost constant gastric pain which always became aggravated by taking food and was always referred to one spot, which was also extremely tender. There had been occasional attacks of vomiting but no hæmatemesis and no melæna. Occult hæmorrhage was never searched for. The patient had often for many months at a time been dieted and put on iron with some improvement, but she had often relapsed. There had been no amenorrhœa and the urine was normal. Constipation had been a constant trouble and headache had persisted. No ocular defects had been discovered. The present attack of acute gastric pain with frequent vomiting had lasted for three days. There was extreme tenderness to the left of the epigastrium. A loud hæmic bruit audible over the left chest was loudest in the pulmonary area. There was slight dyspnœa on movement with slight dilatation of the stomach and some stasis of the gastric contents. The patient looked anæmic. The pulse was 110 and the temperature was subnormal. The following treatment was adopted. Complete rest in bed was enjoined and the administration of one drachm of compound liquorice powder every night. Every four hours small meals, in rotation, of stale bread and butter, chicken jelly, and four ounces of milk to which eight grains of sodium citrate were added were taken, and once a day for two days 10 cubic centimetres of normal horse serum were given by the mouth in milk. No other treatment whatever was undertaken. In 48 hours all pain, tenderness, vomiting, and even nausea had entirely disappeared and have not returned. On the third day of treatment pounded fish and chicken and the yelks of lightly-cooked eggs were given. On the fifth day 10 cubic centimetres of serum were given and pounded meat was added to the dietary. On the tenth day the patient was allowed to get up and was given ordinary household diet. On the thirteenth day she was in full work and she declared herself to be in perfect health. On Oct. 21st the hæmoglobin was 65 per cent. and the red corpuscles numbered 5,300,000. On the 27th, after the administration of 30 cubic centimetres of serum the hæmoglobin was 75 per cent. and the red corpuscles numbered 5,500,000.

This, then, was a case in which there had been a condition of gastric pain for seven years and in which the subacute and acute attacks responded little, if at all, to ordinary treatment. When serum was given an immediate improvement set in and was followed by complete recovery.

CASE 4. *Duodenal ulcer with hæmorrhage.*—In this case, seen by me in consultation, the medical man in charge kindly allowed me every facility and to his courtesy I am indebted for the notes of the case. The patient was an anæmic-looking woman, aged 32 years. For many years she had had constant dyspepsia and severe pain referred always to one spot in the epigastrium, which she found also frequently very tender. The pain had the following characteristics: it sometimes occurred during the swallowing of food and was frequently accompanied by a sense of soreness in the neighbourhood of the cardiac orifice; it disappeared after meals to reappear very constantly after one and a half hours; and it was at times very severe before meals. Constipation had never been troublesome and menstruation had always been normal. Until 12 months ago no evidence had been available as to the presence or the absence of occult hæmorrhage and the patient had never vomited blood or had melæna, but within the last three months both had occurred three times. On the last occasion she went about for three days with duodeno-stasis, still continuing until faintness and impending collapse compelled her to lie up. On examination slight gastrectasis and stasis were present and epigastric pain and tenderness, strictly localised, were elicited. The following treatment was adopted: rest in bed; small frequent meals of pounded chicken fish, brain, eggs, and stale bread, with strictly limited intake of milk, and serum in doses of 10 cubic centimetres given in milk on the fourth, sixth, eighth, tenth, twelfth, fourteenth, sixteenth, seventeenth, eighteenth, nineteenth, and twenty-first days. A control was, so to speak kept in this way. For ten days the patient was given no serum, though complete rest and the above diet were given. No improvement took place until the serum was given. From the first day of its exhibition improvement was marked and progressive. The pain and the vomiting rapidly disappeared, there was no trace of recurrence of hæmorrhage, and the dyspepsia of years had gone. On Oct. 30th the hæmoglobin content was 60 per cent. Serum was first given on Nov. 4th. On the 11th the hæmoglobin was 75 per cent. and on the 26th it was 92 per cent.

The blood counts have been taken for me in the above cases by Mr. E. Quant, F.C.S., of the South Devon Laboratory.

It may at first sight seem unreasonable to expect good results from the application of normal serum-therapy to such

widely different conditions as, for example, hæmophilia and tuberculous caseation of lung or other tissue. But it is not impossible that there is a common basis of autocytolysis in these and in a vast number of other conditions characterised by destruction of epithelial, endothelial, hæmic, or other cell, and that such autolysis can be inhibited by normal serum. It appears from the results that I have obtained by the oral administration of serum that subcutaneous or intravenous injections are not at all necessary. I found at the same time that T.R. tuberculin and antistaphylococcal vaccines and other vaccines may be given in the same way, and apparently the clinical results are in no way impaired. This will of course require confirmation. Since writing this paper I learn that in Australia a number of diseases have been treated by Dr. Montgomerie Paton with antidiphtheritic and other serums administered by the mouth. The cases he has published seem to confirm amply the value of normal serum-therapy that I have independently arrived at.

Harley-street, W.

PLASTIC BRONCHITIS

IN A GIRL, AGED 11 YEARS, THE SEVENTH ATTACK IN FOUR YEARS, THE FIRST OCCURRING AT THE AGE OF SEVEN YEARS: EXTREME DISPLACEMENT OF THE HEART AND MEDIASTINUM, PRODUCED BY COLLAPSE OF THE LUNG, DISAPPEARING WITH EXPECTORATION OF THE CAST, BUT RECURRING AS EACH FRESH CAST FORMED.

BY SAMUEL WEST, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO, AND LECTURER ON MEDICINE AT, ST. BARTHOLOMEW'S HOSPITAL.

A GIRL, aged 11 years, was admitted into St. Bartholomew's Hospital with plastic bronchitis. The first attack was at the age of seven years; since then she had had six attacks, this being the seventh. She had been in this hospital for the previous three attacks. The present attack began on Jan. 14th, 1907, with headache and cough. On the 15th she was at school, but on the 16th she was too unwell to leave bed. She had slept badly, had much headache, vomited several times, complained of a "lump in the throat," and brought up some blood-stained sputum. The patient was a well-developed child, but she looked ill, was somewhat dusky, had a tight cough, and expectorated a little blood-streaked sputum. The temperature was 99° F., the pulse was 140, and the respirations were 36. She complained of feeling a "lump in the chest" in the upper part of the left side in front. The percussion note was greatly impaired over the whole left side, back and front, and at the base behind was almost dull. The vocal resonance and breath-sounds were absent everywhere except in the left interscapular space, where they were somewhat exaggerated. The stony dulness here almost suggested fluid, but there was no displacement of the heart to the opposite side; on the contrary, the apex beat was an inch to the left of the left nipple line in the fifth space and the resonance of the right lung extended across the sternum and reached an inch to the left of the edge of the sternum along the third rib. Corresponding with this the respiratory sounds changed from the somewhat exaggerated sounds of the right lung to the defective sounds of the left. It was evident that the left lung was contracted and the right expanded. This was thought to be due to collapse of the left lung consequent on the occlusion of the left main bronchus by a cast. On Jan. 18th the condition was much the same but the breath was shorter and the duskiness more marked. On the 19th, at 4 A.M., a large

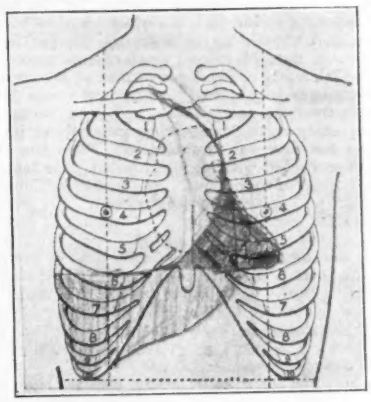


Diagram showing the displacement of organs before the expulsion of the cast.

cast was coughed up two and a half inches long and the stem was nearly one-third of an inch in diameter. It was brought up after much coughing and great distress. The temperature the evening before reached 103° but on the morning after the cast had been expectorated it fell to 99·8°. On the 20th several more pieces of casts of smaller size were brought up along with some muco-purulent sputum. The apex of the heart returned to the left nipple line—i.e., moved two inches towards its proper place. The upper part of the left lung became resonant and the breath sounds there distinct and accompanied with a little crepitation. The base behind, however, continued *in statu quo* with dulness to percussion and absent breath sounds. The patient was now placed upon ten grains of iodide of potassium three times a day. Gradually the physical signs became much as they were on admission, and the heart's apex returned to its former place outside the left nipple line. The patient became more dusky and drowsy, and on the evening of the 22nd she brought up

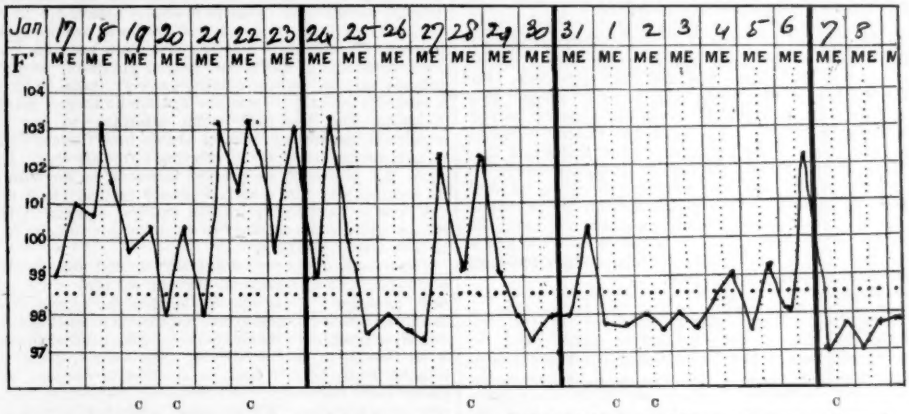


Chart of temperature between Jan. 17th and Feb. 8th. On the dates indicated below by the letter C casts were expectorated.

another cast as large as the first and a good deal of muco-purulent expectoration. The apex immediately returned nearly to its former position and was felt half an inch *inside* the left nipple line. As before, the whole left side became resonant, vocal resonance returned, the breath sounds became audible, and were accompanied with some rhonchus and crepitation. At the base behind, as before, there was still some dulness and the voice and breath sounds remained absent. The child was greatly relieved and slept peacefully afterwards for some time. In the course of the next few days the same series of events recurred, the heart gradually passed out again, dyspnœa and duskiness recurred, until on the 28th another cast of the same size and character as the others was coughed up with similar relief to the patient and with the return of the heart to its normal position. However, a few hours later it was evident that another cast was forming with considerable rapidity, for the heart was moving outwards again and the other physical signs were returning, and at midday on Feb. 1st another large cast appeared. On the 3rd several small casts were coughed up and on the 7th a large one, each event being accompanied by the same changes in physical signs as have been described. Up to this time the temperature had been very unstable, rising frequently to 103° and being generally at its highest just before the cast was expectorated. From the 7th convalescence proceeded without interruption. The temperature remained normal or subnormal. The heart continued in its normal place and the patient looked well. She was kept in the hospital for some time largely as a matter of charity and was discharged on May 7th perfectly well, with the heart and lungs in their normal position and without any physical signs in the chest. The casts were examined microscopically and bacteriologically but without any positive result.

The case is an ordinary one of plastic bronchitis and except for the size of the casts does not present any remarkable features. The point of interest is *the displacement of the heart and complementary dilatation of the opposite lung* which followed on the collapse of the affected lung, changes which could hardly have been greater with pneumothorax of the right side. I have once before observed this in a case of extensive broncho-pneumonia of the left lung in a small child, the apex beating half an inch outside the left nipple line and returning to its normal place as the collapse passed off. I have not met with any account of a similar case to the present, which therefore seems worth recording. Some considerations of physiological interest arise out of it. The processes by which the air is absorbed from the air vesicles on collapse or from the pleura in pneumothorax are not fully understood. So far as the O and CO_2 are concerned, these gases exist in the blood partly in solution and partly in loose chemical combination. So that we may fairly suppose that they are removed in these ways. The N presents greater difficulties, being so inert a chemical body. Yet it, too, is removed and often with considerable rapidity.

The forces under which the gases are removed are greater than the elasticity of the lung—i.e., 6–8 millimetres of Hg—otherwise there would be a tendency for air to collect spontaneously in the pleura, and this does not occur. But this case shows that the forces must be much greater than this, for they were sufficient to cause the opposite lung to expand to the maximum. No doubt the violent coughing increased the forces of expiration very considerably and thus favoured absorption during the time of coughing, but in the intervals between the attack of coughing the forces at work would have to be equal to the elastic tension of the lung in its condition of exaggerated stretching, which can hardly be less than 10 millimetres of Hg or 5 inches of water and is probably more, and it must be against this resistance at least that absorption of the air took place.

Wimpole street, W.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—A quarterly meeting of the Royal College of Physicians of Edinburgh was held on Feb. 4th, Dr. C. E. Underhill, the President, being in the chair. Theodore Charles MacKenzie, M.B. Edin., F.R.C.P. Edin., was introduced and took his seat as a Fellow of the College. Patrick Hehir, M.D. Brux., M.R.C.P. Edin., Lansdowne, India; and Harold Sherman Ballantyne, M.B., C.M. Edin., M.R.C.P. Edin., Dalkeith, were admitted by ballot to the Fellowship of the College. Lindsay Stephen Milne, M.B., Ch.B. Edin., Montrose, was admitted by ballot to the Membership of the College after examination. The Registrar reported that since the last quarterly meeting 27 persons had obtained the Licence of the College by examination.

AN ARTIFICIAL "AIR-WAY" FOR USE DURING ANÆSTHETISATION.

BY FREDERIC W. HEWITT, M.V.O., M.A., M.D. CANTAB.,

ANÆSTHETIST TO HIS MAJESTY THE KING; PHYSICIAN-ANÆSTHETIST TO ST. GEORGE'S HOSPITAL; CONSULTING ANÆSTHETIST AND EMERITUS LECTURER ON ANÆSTHETICS AT THE LONDON HOSPITAL.

ON several previous occasions, not only in the columns of THE LANCET but elsewhere, I have endeavoured to establish the proposition that in most of the cases in which difficulties arise during general anæsthesia these difficulties are directly dependent upon mechanically obstructed breathing and that this condition, occurring as an incident, introduces into administrations an auto-asphyxial element the true nature of which is frequently misunderstood. It has been pointed out that whilst there are many different varieties of mechanically obstructed breathing—i.e., many different ways in which the respiratory pump may be thrown out of gear independently of any defect in the nerve energy at its disposal—these varieties are capable of being arranged in two main groups. In Group 1 we have obstructive states dependent upon the operation of causes *within* the upper air-passages, and in Group 2 we have obstructive states dependent upon the operation of causes *external* to those passages. As an example of obstructed breathing of the former kind may be mentioned that arising from altered position, spasm, or swelling of the tongue. As an illustration of mechanically impeded breathing of the latter kind, that dependent upon spasm of the external respiratory muscles may be cited. On the present occasion I propose to deal only with the treatment of certain of the obstructive conditions of the first of these two groups and to confine my remarks to cases in which the respiration of semi-anæsthetised or anæsthetised patients becomes partially or completely obstructed owing to occlusion of the air-tract *above the larynx*.

Were it customary, as in physiological experiments, to introduce anæsthetic gases and vapours into the pulmonary passages through a tracheal cannula the text-book descriptions of the clinical phenomena of incipient and complete general surgical anæsthesia would markedly differ from those with which we are now familiar. Under such circumstances we should obtain far more equable results in our administrations and there would be much less intercurrent respiratory disturbance. But as it is necessary in surgical practice to introduce anæsthetics through the ever-varying nasal and oral passages this smoothness in anæsthetisation cannot be depended upon. The upper air-passages of all subjects are liable to alterations in their conformation and calibre during general anæsthesia. This is specially noticeable in certain subjects, e.g., the thick-set and plethoric, whose upper air-passages are naturally narrow; in certain postures, e.g., the Trendelenburg, in which the tongue gravitates towards the palate; and in certain operations, e.g., rectal, which have a tendency reflexly to produce spasmodic tongue retraction. Everyone who has paid much attention to the clinical aspects of general anæsthesia knows how frequently he has to adopt some means for preserving a free air-way. In some cases the jaw must be pressed forwards or the chin pulled up continuously; in others, a mouth-prop adjusted to meet the special peculiarities of the case is required; whilst in others again it is necessary to apply tongue forceps in order to insure free breathing.

The question here presents itself: Should anæsthetic gases and vapours be administered through the oral or through the nasal passages? It is interesting that the natural tendency towards nasal as opposed to oral respiration persists in a marked and often in an inconvenient degree during general anæsthesia. Even though a patient, obeying instructions, commence to breathe orally he will tend, as anæsthesia deepens, towards purely nasal respiration, and this nasal respiration frequently proves inadequate. Whilst nasal breathing is undoubtedly of paramount importance in everyday life it is, as a rule, inferior to oral breathing during the induction and maintenance of general anæsthesia. Suffocative sensations during induction are generally due to nasal respiration, the nasal passages being of insufficient calibre to allow of that quantity of oxygen reaching the lungs per minute which is essential to full blood oxygenation, and hence to the patient's comfort during incipient anæsthesia. It is true that when anæsthesia has become established nasal respiration may

under certain conditions, be quite satisfactory, these conditions being (1) the existence of spacious nasal channels, and (2) a sufficiently high oxygen percentage in the atmosphere presented to the patient. But it often happens in practice that the nasal passages, either from pre-existing conditions within them, or from causes which have arisen during the administration, do not permit that *free* intake of oxygen by the lungs which is necessary in order that all asphyxial phenomena may be prevented. With such a restricted inlet to the respiratory pump the abdominal and thoracic muscles necessarily become thrown into exaggerated action; and muscular rigidity, cyanosis, dilatation of the pupils, separation of the lids, and even pallor may result. Auto-asphyxia thus insidiously arising is not infrequently mistaken for chloroform overdosage, surgical shock, or other conditions.

In order to secure free and exclusively oral respiration when administering anæsthetics it is necessary (1) to keep the teeth or gums apart; (2) to keep the tongue away from the palate and pharynx; and (3) to block the nasal channels. The little appliance here figured effects this in most cases—not, perhaps, in all, because of the great variations which exist in the conformation of the upper air passages of different subjects. It consists of a circular metal ring,

with an internal diameter of half an inch, and with a deep groove in its outer circumference to allow of the ring being held firmly by the teeth. The two flanges which result from the presence of this circular groove or trough are of unequal size, the smaller projecting within the mouth and the larger outside the teeth or gums. From the inner circumference of the ring there also projects into the mouth a short metal collar carrying a portion of indiarubber tubing the free end of which is cut obliquely or whistle-shaped, as shown in the figure. The tubing should have a maximum length of about three and a quarter inches, a clear internal bore of half an inch, and its wall should be sufficiently thick to prevent kinking. By a simple screw adjustment in the collar the rubber tube may, if desired, be removed from the metal ring which will then act as a mouth prop.

The artificial "air-way" is not intended for use in every case. It is principally serviceable in those cases in which respiration is performed with some embarrassment or difficulty owing to the upper air-tract being more or less obstructed. If at the conclusion of the induction period, when the patient should be settling down into smooth and deep anæsthesia, the breathing be laboured and noisy, with sniffing or snorting sounds—if, in other words, the patient be "taking the anæsthetic badly" or "breathing badly"—the jaws should be separated and the whistle-shaped end of the "air-way" passed backwards into the pharynx, so that the oblique opening of the rubber tube faces the laryngeal orifice, and the metal ring adjusted so that it is grasped by the teeth or gums. The substitution of free oral for imperfect nasal or oral respiration will, in the great majority of cases, immediately be followed by slower and quieter breathing, an improvement in colour, and greater muscular relaxation; in fact, by an altogether better type of anæsthesia. Should there be much jaw spasm at the moment when it is desired to introduce the "air-way" it may be necessary to separate the teeth by means of a Mason's gag. It is advisable to secure a fairly deep anæsthesia before the instrument is placed *in situ*, otherwise inconvenient reflex retching and coughing may be excited. The appliance is, in fact, only suitable for cases in which it is desired to maintain a fairly deep anæsthesia. As regards the administration after the introduction of the "air-way," it must be remembered that with the more free intake of atmospheric air less anæsthetic will be required. In cases in which partial occlusion of the upper air-tract exists much of the vapour which is presented to the patient never actually gains access to the pulmonary passages. If, therefore, a certain rate of administration has been in force during the period of hampered breathing this rate must be reduced when the insertion of the "air-way" has secured free respiration, otherwise an unnecessarily deep anæsthesia will result. As the air-way does not project beyond the lips it may be used either during the administration of ether, chloroform, or chloroform mixtures. The writer finds it of great value when anæsthetising patients in the Trendelenburg posture, for in this posture the swollen tongue frequently obstructs breathing.

Messrs. Barth and Co. of 54, Poland-street, Oxford-street, London, W., are the makers of this artificial "air-way." I am indebted to them for having made other experimental appliances for me whilst working at this subject.

Queen Anne-street, W.

THE "EARLY" OPERATION IN ACUTE APPENDICITIS: THE INDICATIONS FOR ITS PERFORMANCE AND ITS ADVANTAGES.[1]

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THE advisability of early surgical interference in cases of acute appendicitis is becoming more and more recognised every day and instead of waiting for indications of suppuration, as was formerly the practice, we now attempt to forestall this complication by operating at a much earlier stage in the course of an attack.

For clinical purposes we may divide cases of acute appendicitis into two classes—viz., simple and destructive. In the first variety there is a simple or catarrhal inflammation of the mucous membrane which does not run on to suppuration or perforation but terminates in resolution, though often leaving the appendix in a somewhat altered or damaged condition with a tendency to recurrent attacks. In the destructive form serious changes result, either a localised perforation or more or less extensive gangrene of the walls of the appendix, both conditions being usually accompanied by suppuration. This may take the form of an encysted abscess or there may be a formation of pus either localised, i.e., at first confined to the region of the appendix, though not encysted or surrounded by a barrier of lymph, but soon spreading and becoming more or less general, i.e., diffused throughout the peritoneal cavity ("diffuse suppurative peritonitis"), if the case is allowed to run its course.

It has recently become the custom to divide the course of an attack into three stages—viz., (1) the "early" stage, which includes the first 48 hours; (2) the "intermediate" stage, which extends from the third to the fifth day; and (3) the "late" stage, which extends from the fifth day until the termination of the case. Operations are now classified as "*early*," "*intermediate*," and "*late*," according to the corresponding stage in which they are performed.

During the past year it has been my practice, when possible, to operate at a much earlier period than formerly, i.e., in the "early" stage, in all cases where the initial symptoms were of a grave nature and indicating that destructive changes were taking place, or were likely to do so, in the walls of the appendix. So far the results have been most satisfactory, and I append a brief record (Table I.) of ten cases, all operated upon in the "early" stage, viz., within 48 hours, the onset of abdominal pain or sickness being taken as the initial symptom. In each instance the appendix was removed at the same time and all the patients made a good recovery. These cases all occurred in private practice, it being unusual to obtain the opportunity of such early operation in hospital patients. That this is so is proved by a reference to Tables IV. and V., which include all the acute cases, 26 in number, admitted into my wards at the Manchester Royal Infirmary during the same period. Some of these were operated upon by myself, the others by the honorary assistant surgeons (Mr. J. W. Smith, Mr. A. H. Burgess, and Mr. J. H. Ray), or by the resident surgical officer (Mr. P. R. Wrigley). None of the 26 cases were admitted in the "early" stage and therefore operative interference was not possible within the first 48 hours. The contrast in the result is striking, for of the 26 hospital patients operated upon in the "intermediate"

[1] A paper read before the Manchester Medical Society on March 27th, 1907, in a discussion on the Diagnosis and Treatment of Acute Appendicitis.

CASES OF OPERATION FOR ACUTE APPENDICITIS.

TABLE I.—EARLY OPERATIONS (*i.e., within 48 hours*). PRIVATE CASES.

No.	Under the care of—	Date of operation.	Sex.	Years of age.	Approximate duration of symptoms	Pulse and temperature at time of operation. P.	T.	Suppuration.	Removal of appendix.	Condition of appendix.	Result.
	Dr. F. R. Mallett (Bolton).	1906. Feb. 1st.	M.	29	48 hours.	88	100°	Localised.	Yes.	Small perforation; inflamed and very friable; three concretions.	Recovered.
2	Dr. Helene Goldberg-Saul (Withington).	June 18th.	M.	19	19 ,,	110	103°	Absent.	,,	Lumen completely occluded, distal portion distended with pus; three concretions.	,,
3	Mr. J. T. Finlay (Rawtenstall).	July 14th.	M.	7	42 ,,	124	105°	,,	,,	Mucous membrane inflamed; two patches of superficial ulceration.	,,
4	Dr. D. Macmillan (Prestwich).	,, 21st.	F.	30	48 ,,	108	104°	,,	,,	Intensely injected, coated with flaky lymph; mucous membrane ulcerated.	,,
5	Mr. R. A. Shelton Daly (Manchester).	Nov. 3rd.	M.	38	42 ,,	120-130	—	Localised	,,	Gangrenous and perforated.	,,
6	Mr. J. T. Finlay (Rawtenstall).	,, 19th.	F.	24	18 ,,	118	99°	Absent.	,,	Intensely congested.	,,
7	Dr. D. Macmillan (Prestwich).	,, 21st.	F.	25	24 ,,	96	100°	,,	,,	Acutely inflamed, and roughened from deposit of lymph.	,,
8	Mr. G. M. Drury (Cheadle Heath).	1907. Jan. 13th.	F.	20	42 ,,	120	101°	Localised.	,,	Gangrenous and perforated; concretion.	,,
9	Dr. A. A. Mumford (Chorlton-cum-Hardy).	,, 15th.	M.	24	12 ,,	108	100°	Absent.	,,	Intensely congested and of purplish colour, becoming gangrenous; distended with dark fluid and on point of rupture; concretion.	,,
10	Mr. A. P. Walker (Hadfield).	Feb. 9th.	M.	54	43 ,,	88	99·6°	Localised.	,,	Small perforation, with extensive patch of gangrenous mucous membrane; concretion.	,,

Number of cases 10. Died, 0. Mortality, *nil.*

TABLE II.—INTERMEDIATE OPERATIONS (*i.e., third to fifth day*). PRIVATE CASES.

1	Dr. J. Mason (Windermere).	1906. Feb. 19th.	M.	8	5 days.	116	101°	Encysted.	No.	Not seen.	Recovered.
2	Mr. J. T. Finlay (Rawtenstall).	April 16th.	F.	20	3 ,,	140	99·6°	General.	,,	,,	Died.
3	Dr. D. J. Mackenzie (Glossop).	Oct. 3rd.	F.	25	3 ,,	120	104°	Localised.	Yes.	Gangrenous and perforated; concretion.	Recovered.

Number of cases, 3. Died, 1. Mortality, 33 per cent.

TABLE III.—LATE OPERATIONS (*i.e., after fifth day*). PRIVATE CASES.

1	Mr. Edmund Lee (Manchester).	1906. March 28th.	F.	8	12 days.	—	—	Encysted.	No.	Not seen.	Recovered.
2	Dr. G. F. Waterston (Bolton).	May 1st.	F.	23	14 ,,	110	101·2°	,,	,,	,,	,,

Number of cases, 2. Died, 0. Mortality, *nil.*

and "late" stages no fewer than eight died, giving a mortality of 30 per cent. Five private patients were operated upon during the "intermediate" and "late" stages with one death, giving a mortality of 20 per cent. (Tables II. and III.). If all the cases are considered together the result is as follows:—

	Cases.	Died.	Mortality.
"Early" operation	10	0	*Nil.*
"Intermediate" operation ...	17	8	47 per cent.
"Late" operation	14	1	7 ,,
Total	41	9	22 ,,

It is worthy of note that in eight out of the nine fatal cases there was general suppuration throughout the peritoneal cavity at the time of operation. Judging by the condition found in four of the cases recorded in Table I (Cases 1, 5, 8, and 10), where there was localised suppuration and where success attended the "early" operation, it is probable that a similar result would also have followed earlier surgical intervention in the fatal cases—that is to say, if the peritoneal cavity had been opened and drained before the suppuration had spread and become general. In the remaining fatal case (Table IV., Case 14), though suppuration had not taken place, the appendix was becoming gangrenous at the time of operation; in this instance death was due to infective endocarditis with pericardial effusion.

As regards the indications for early operative interference in acute appendicitis, the difficulty that we often meet with at the onset is that it is impossible to foretell the course which the inflammatory process will take—viz., whether the attack will be of the simple or of the destructive variety. For it is a recognised fact that the early symptoms may be of a very mild character, even when grave lesions are taking place in the appendix.

The temperature and pulse-rate bear no constant relation to the severity of the attack. They may both be increased in the simple form, while in the destructive variety—even when perforation and gangrene are impending or have taken place—there may be very little rise in either (as in Table I., Case 10), or they may remain normal or even become subnormal. A rapid pulse, however—e.g., over 100, and especially if above 120, in the early stage—is always suggestive of serious mischief and points to a probable termination in suppuration. The same applies to a high temperature—e.g., 103° or

TABLE IV.—INTERMEDIATE OPERATIONS (*i.e., third to fifth day*). HOSPITAL CASES.

No.	Date of operation.	Sex.	Years of age.	Duration of symptoms.	Suppuration.	Removal of appendix.	Condition of appendix.	Result.
1	Jan. 24th, 1906.	F.	24	5 days.	Encysted.	No.	—	Recovered.
2	Feb. 23rd ,,	M.	12	4 ,,	General.	Yes.	Gangrenous and perforated.	Died.
3	March 25th ,,	M.	30	5 ,,	,,	No.	—	,,
4	April 18th ,,	M.	9	3 ,,	,,	,,	Gangrenous and perforated.	,,
5	May 16th ,,	M.	8	4 ,,	,,	,,	—	,,
6	,, 20th ,,	M.	15	3 ,,	Encysted.	,,	—	Recovered.
7	July 13th ,,	M.	23	5 ,,	,,	Yes.	Gangrenous and perforated.	,,
8	August 8th ,,	F.	29	4 ,,	Localised.	,,	Gangrenous and perforated; concretion.	,,
9	Sept. 9th ,,	M.	19	3 ,,	Encysted.	No.	—	,,
10	,, 29th ,,	M.	19	5 ,,	General.	,,	—	Died.
11	Nov. 4th ,,	F.	16	5 ,,	Encysted.	Yes.	Contained concretion.	Recovered.
12	Dec. 28th ,,	F.	25	3 ,,	General.	,,	Gangrenous and perforated.	,,
13	Jan. 21st, 1907.	M.	19	4 ,,	,,	,,	Gangrenous and perforated; concretion.	Died.
14	,, 23rd ,,	M.	26	3 ,,	Absent.	,,	Gangrenous; not perforated.	,,

Number of cases, 14. Died, 7. Mortality, 50 per cent.

TABLE V.—LATE OPERATIONS (*i.e., after fifth day*). HOSPITAL CASES.

1	Jan. 26th, 1906.	M.	54	4 weeks (?)	Encysted.	No.	—	Recovered.
2	Feb. 21st ,,	M.	12	7 days.	General.	,,	—	,,
3	22nd ,,	F.	13	8 ,,	Encysted.	Yes.	Acute inflammation; concretion.	,,
4	April 8th ,,	F.	10	7 ,,	,,	No.	—	,,
5	June 17th ,,	F.	37	12 ,,	,,	,,	—	,,
6	Sept. 4th ,,	M.	7	7 ,,	General.	Yes.	Gangrenous.	,,
7	,, 21st ,,	M.	39	10 ,,	,,	,,	,,	Died.
8	Oct. 2nd ,,	M.	28	14 ,,	Encysted.	No.	—	Recovered.
9	,, 3rd ,,	M.	23	14 ,,	,,	,,	—	,,
10	,, 31st ,,	F.	34	9 ,,	,,	,,	—	,,
11	Dec. 2nd ,,	F.	24	10 ,,	,,	,,	—	,,
12	Jan. 23rd, 1907.	M.	26	6 ,,	,,	Yes.	Gangrenous.	,,

Number of cases, 12. Died, 1. Mortality, 8 per cent.

104° F. On the other hand, a subnormal temperature, especially if the fall has been sudden, often indicates that perforation has taken place, and the pulse-rate may not be increased under the same conditions. A high temperature and a slow pulse, or *vice versâ*, are always unfavourable symptoms. An initial rigor is always a grave symptom and should be regarded as a danger-signal. Urgent vomiting or acute pain at the onset renders it probable that the attack will be a severe one. Painful rigidity of the abdominal wall, especially if general, when well marked in the early stage, is always a most important indication of the gravity of the attack and generally symptomatic of the existence of acute peritonitis.

Another early symptom upon which I place great importance as indicative of the latter condition and pointing to the onset or the presence of the destructive form of appendicitis is the absence of abdominal respiration, the breathing being mainly or entirely thoracic. If the patient is told to take a deep inspiration, the abdomen being freely exposed to view, it will be found that there is either no movement whatever of the abdominal wall or only a very slight expansion at its upper part—viz., immediately below the sternum and lower margin of the ribs. Even this amount of movement is frequently absent and occasionally there may be noticed a slight in-drawing of the abdominal wall in this situation if the pain does not prevent the patient from taking a deep breath. When this state of the abdomen is present at the onset of the attack and there are in addition the three cardinal symptoms of appendicitis, viz., pain, tenderness, and rigidity of the abdominal wall, most marked over the region of the appendix, together with quickened pulse and increased temperature, or even without much alteration in pulse and temperature, it is probable that the attack is, or will be, of a severe character—i.e., of the destructive type. This motionless condition of the abdomen during respiration was observed in all the cases recorded in Table I. and it was the main indication which induced me to advise immediate operation even when there was little increase in the pulse-rate or temperature (as in Cases 1, 7, 9, and 10). I believe it is always indicative of the presence of peritonitis, and a reference to the cases in Table I. will show that in these circumstances serious changes were commencing, or had already taken place, in the walls of the appendix.

The advantages of surgical interference in the early stage of acute appendicitis are as follows: 1. The infective centre—i.e., the appendix—can be removed in many cases before suppuration has taken place, and if it has not perforated or become gangrenous the operation is practically an aseptic one. 2. If pus has formed, even though not encysted and surrounded by a barrier of lymph, it will usually be found to be localised as yet to the neighbourhood of the appendix and small in quantity (Table I., Cases 1, 5, 8, and 10). In these circumstances its evacuation, together with the removal of the appendix, if followed by free drainage, will usually check the spread of the suppuration which otherwise so often tends to become general. 3. The operation being performed before the onset of general toxæmia, the common cause of death in fatal cases, is usually well borne by the patient. 4. The risks of the later complications of acute appendicitis, viz., subphrenic and hepatic abscess, empyema, parotitis, phlebitis, and infections in other parts of the body, are greatly minimised. In past years I have met with instances of all the secondary complications just mentioned. 5. In the early stage the appendix—unless bound down by adhesions the result of a previous attack—lies quite free and is therefore easily removeable. In the later stages, especially in the less acute cases, it is often surrounded and imbedded in a deposit of lymph, which may form part of the wall of an abscess when the pus is encysted. In these circumstances, it is often not easy to recognise the appendix, and its removal is frequently difficult or impossible without breaking down this barrier of lymph, and thus running the risk of infecting the general peritoneal cavity.

It is a question whether the rule of early operation in acute appendicitis might not with advantage be extended to all

cases, even when the initial symptoms are of a mild character and point to the attack being of the "simple" form, for it is never possible to predict with certainty what course the inflammatory process will take, and there is always the risk of a termination in suppuration. Supposing, however, that this does not take place and the appendix is allowed to remain, it will probably be left more or less thickened and contracted or bound down by adhesions, and therefore in such a condition that sooner or later the attacks will almost certainly recur. If all cases of appendicitis are operated upon in the early stage, as soon as the diagnosis is established, I believe that the danger will not be any greater than that which attends removal of the appendix in the quiescent period following one or more attacks. In the latter circumstances appendectomy is frequently a complicated operation owing to the presence of adhesions, the result of the previous attacks, and the appendix may be so fixed and buried in these adhesions that its recognition, as well as its removal, are often attended with considerable difficulty.

As regards the after-treatment in the cases recorded in the accompanying tables drainage was employed in every instance and even when suppuration had not taken place a small tube was left in the wound for 36 or 48 hours, perhaps rather as a safeguard than because it was absolutely necessary. When there was an encysted abscess or localised suppuration larger tubes and strips of gauze were inserted and a counter-opening was usually made in the loin, or through the vagina in females, when the pus tracked down into the pelvis. Care was always taken to disturb the parts around the area of suppuration as little as possible, so as not to break down any protective adhesions which might be forming. When the suppuration was general one or more openings were also made in the middle line or on the opposite side of the abdomen; and under the same conditions Fowler's position, and Murphy's method of saline injections into the rectum, were employed in some of the cases.

Manchester.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CAVERNOUS NÆVUS: TREATMENT BY METALLIC MAGNESIUM.

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MY attention was first directed to the above mode of treatment by a paper on the subject by my friend Dr. Gavin McCallum of Geelong, Australia, in which he reported one or two cases in which highly satisfactory results were obtained by the method to be described.

The patient, a weakly girl, 15 months old, was first seen by me at the Elder Hospital in May, 1905, suffering from a large cavernous nævus of the right side of the face which occupied the whole substance of the cheek, being covered superficially by a layer of thin, white skin resembling that which is seen covering scars which have stretched, while internally it projected slightly into the cavity of the mouth, being covered by the mucous membrane which appeared healthy and of normal texture. The tumour was larger than a walnut normally, but increased considerably in size when the patient cried, while it diminished slightly on digital pressure. Slight arterial pulsation was felt. The patient was first operated on in July, 1905, then in January, 1906, and, lastly, in July, 1906, so that a period of six months elapsed between each application. After the first operation the tumour increased in size for a few days succeeding the operation, became firmer, and conveyed a sensation of increased warmth to the touch. It then gradually decreased in size and became distinctly firmer, presenting more definite outline than it previously had done. Similar results followed the other two operations, but after the third operation I was still doubtful as to the entire success of the treatment; the tumour had become distinctly smaller and firmer, but I was still uncertain whether some tumour tissue did not remain. The patient became ill shortly after the third operation, so that I did not see her again until November, 1907—over a year since the third operation—when I again had an opportunity of examining her. I now found that the tumour had entirely disappeared, the cheek presenting, on palpation, a thickening over the site of the tumour, due doubtless to the connective tissue which had formed as a result of the treatment. Not only had no scar resulted from the treatment but the skin over the surface, which it will be remembered was of a very unsatisfactory character when first seen, had slightly improved.

The mode of treatment, which I modified slightly, consisted in preparing several needles cut from magnesium ribbon. These were sterilised by boiling and were introduced by pushing with a pair of forceps into the substance of the tumour through a slight puncture in the surface made with a bistoury. The needles were entirely buried in the substance of the tumour, no part being left projecting on the surface, and care being taken to prevent perforation of the mucous membrane on the inner surface. Some six or eight needles were introduced on each occasion into various parts of the tumour, strict asepsis being observed throughout, and the surface operated on was covered by a film of gauze with celloidin to exclude contamination after operation. The magnesium ribbon is a little troublesome to manipulate owing to its being both soft and brittle, but with a little patience these difficulties are overcome. I do not know of any other method which would have yielded an equally satisfactory result in this case, where the tumour was large and situated on the most prominent part of the face where scarring or change of contour would at once attract attention.

The beneficial action which the magnesium needles exert in such cases is probably due to two causes. In the first place, the needles exert a mechanically irritating effect on the walls of the vessels with which they come in contact, a constant movement being kept up both by the pulsation of the little arteries and by movements of the cheek. In consequence of this movement the endothelial lining of these vessels will be abraded and a white thrombus will form, as has been demonstrated by Sir William Macewen to occur when an aneurysm is treated by his method of needling. This is the more important action. In the second place, magnesium, as is well known, is very readily oxidised, and this process of oxidation appears to take place very rapidly in the tissues; indeed, so rapid was the process in the case here reported that it was difficult to detect the presence of the needles in the tissues some three or four days after their introduction. This, of course, is an important point in this method of treatment, as it enables one to bury the needles at the outset, thus permitting rapid healing of the minute surface wound, and the needle is removed after a few days by the oxidising action of the blood and probably the leucocytes. During the oxidising process, however, the magnesium probably causes the formation of small red thrombi, in addition to the white ones mentioned above. The embryonic fixed tissue cells in the white thrombi will rapidly become converted into adult connective tissue, while the red thrombi will to some extent be replaced by similar fibroblasts which will also become converted later into adult connective tissue. The connective tissue so formed will occlude the vessels in connexion with which it grew, and, by its subsequent contraction, will obliterate the vessels in its neighbourhood. Thus the ultimate result is occlusion of all the vessels of the tumour by fibrous tissue formation, which ultimately will greatly diminish in bulk.

Glasgow.

A NOTE ON THREE CASES OF PLAGUE TREATED BY YERSIN'S SERUM.

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IN the fourth Croonian lecture by Professor W. J. R. Simpson, reported in THE LANCET of July 27th, 1907, the following remarks are made: "Great expectations were raised on the introduction of Yersin's serum but they have not been realised and a serum has yet to be discovered which while being germicidal in its action also possesses antitoxic properties." I must acknowledge that up to now

I have not what one might call an extensive personal experience of plague, as most of my cases are sent into the lazaretto here and then I lose sight of them, but I should like to report the effect of Yersin's serum in the few cases of foreigners that I have treated myself as I feel sure that this serum is maligned.

CASE 1.—The patient was a woman, aged 22 years. I was called to see her about 4 P.M. Her temperature was 103° F. Her face was flushed and she was feeling very ill. I visited her at 8 A.M. on the following day when her temperature was 105°. I called in the medical officer of health who confirmed my opinion that it was a case of bubonic plague. At 12 noon we gave an intravenous injection of Yersin's serum, the dose being 80 cubic centimetres. About two hours later the patient had a rigor. On the day after there was no fever and she was feeling much better. In this case the patient completely recovered except that she suffered from rheumatism about 14 days later, the effects of the injection.

CASE 2.—The patient, a man, aged 50 years, was admitted to hospital as a case of typhoid fever (?). His temperature was 102° F., the pulse was dicrotic, and the spleen was palpable. Two days later a bubo appeared in the left groin. The patient was given 40 cubic centimetres of serum intravenously with the effect that the temperature fell to normal, but he had no rigor. Two days afterwards the temperature again rose to 102°; the same dose was repeated and the temperature fell to 100°. The man died, however, in a comatose condition, and I believe that in this case I gave insufficient serum but was advised not to increase the doses.

CASE 3.—The patient, a man, aged 25 years, was seen at 12 noon. His temperature was 106° F. in the rectum. He had been quite well the day before. I called in the medical officer of health who agreed that the man was suffering from bubonic plague. The patient was given an intravenous injection of 80 cubic centimetres of serum. His temperature on the next morning was normal. On the following day the temperature in the rectum was 104°. The dose was repeated and the temperature fell to 100° and kept so for two days, when he began to cough and to expectorate pneumonic sputum. This was examined microscopically and was found to contain numbers of bubonic bacilli. On examination the right apex was found to be consolidated. I then thought the case almost hopeless and gave the patient an intravenous injection of 130 cubic centimetres of Yersin's serum. Two hours later he had a severe rigor. The temperature on the following day was normal, there were much less cough and sputum, and the lung was better. After this the patient made an uninterrupted recovery except that about ten days later he had rheumatism and fever, no doubt due to the injections.

These are the three cases that I myself have attended and they seem to me to show that: (1) unless the patient has a rigor after the injections they have not had a large enough dose; (2) that the doses advised are not nearly large enough for severe cases; and (3) that there is no ill effect from large intravenous injections of Yersin's serum.

I am unaware what dosage is generally used in India, but I presume from about 20 to 40 cubic centimetres as per instructions. At the same time I am aware that three cases are insufficient to judge from, but I was anxious to give only those that I myself could vouch for, although I could get plenty more examples of large doses from the Chilian lazaretto in this town with excellent results.

Antofagasta, Chili.

NOTE ON A CASE OF SEPTICÆMIA DUE TO PNEUMOCOCCUS; DEATH.

BY JOHN BELL, L.R.C.P. LOND., M.R.C.S. ENG.,
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AN Indian male, aged 22 years, was admitted to hospital under my care on Dec. 1st last, with a fluctuating swelling just below the left clavicle which he attributed to having tried to raise a very heavy box a few days previously. The abscess, containing about two ounces of pus, was opened on the next day and the case progressed well up to the 12th when there was still a small sinus about one inch in depth. The patient was most anxious to leave the hospital but he was kept in until the wound was completely closed. On the next day he complained of feeling chilly with pains all over and there were a few fine crepitations at the base of the right lung. His temperature in the morning was 99° F. and in the evening it was 100°. On the 14th he felt better, the temperature in the morning being 98·4° and in the evening 100·8°. On the 15th he was very seriously ill. He had much pain and discomfort all over the abdomen, especially over the bladder, where there was a diffuse swelling extending to the flanks. There was slight delirium, the tongue was very dry and furred, and there were hæmorrhages under the conjunctivæ and petechial eruption all over the body. The temperature was 100·6° and the pulse was very small and quick. The wound looked well. A blood slide showed no plague bacilli or malarial parasites, but was full of normoblasts. The patient was not anæmic. He rapidly succumbed and died in the afternoon.

Post mortem, the abdominal swelling consisted of a large extravasation of blood between the skin and the peritoneum through all the muscular layers and extending on both sides to the back to the level of the pelvic brim. Smears from this were full of typical pneumococci. The heart was covered with small petechiæ, and the blood from the ventricle showed almost a pure growth of capsulated pneumococci. All the other organs were healthy and the wound was normal, though a scraping from the sinus also showed pneumococci. Dr. C. M. Heanley, Government bacteriologist, who was present at the time, kindly saw the slides and agreed with the diagnosis of septicæmia due to pneumococcus.

The patient was a healthy, well-nourished Indian and the abscess was quite superficial and was treated throughout aseptically. It is difficult to understand why, when he was practically well, such a serious disease should arise which carried him off in 48 hours.

Hong-Kong.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Nutmeg Poisoning.—Arterio-sclerosis and its Causation.

A MEETING of this section was held at the Apothecaries' Hall, Blackfriars, on Jan. 28th, Dr. T. E. BURTON BROWN, the President, being in the chair.

Professor A. R. CUSHNY gave an address on Nutmeg Poisoning. He referred to the scanty recognition of this in English medical literature and noted the work of his former assistant, Dr. Wallace, in America, who found that cases of poisoning occurred exclusively from the use of the crude nutmeg or mace; in many instances it had been used as an abortifacient, although it does not appear to have this action. As far back as 1576 Lobelius relates a case in which a woman was rendered delirious by nutmeg. The symptoms are drowsiness, stupor, diplopia; delirium frequently is present, and sometimes the first symptom is burning pain in the stomach, præcordial anxiety, or giddiness. One case of death in a boy occurred after eating two nutmegs. The symptoms resembled those caused by cannabis indica. Professor Cushny showed how the powerful poison was contained in the oil of nutmeg and it was the fraction which came over at 150° C. under 14 millimetres mercury pressure; from this several bodies have been isolated —e.g., myristicin. From experimental work Professor Cushny came to the conclusion that the symptoms were to be attributed to the action on the central nervous system, which was depressed but exhibited some indications of stimulation in the form of restlessness, slight convulsive movements, and tremor. The oil also had a marked local irritant action, whether given by the mouth or hypodermically. The stomach wall was found red and injected, the urine often containing albumin.—Dr. POWER (introduced by Professor Cushny) said that he had been working on the chemistry of oil of nutmeg, which he found a very complex mixture. He had isolated large quantities of myristicin which did not conform in its features with the substance described by Semmler under that name. He drew attention to the very small amount of myristicin contained in the quantity of nutmeg necessary to induce poisoning, this suggesting a doubt to his mind whether the symptoms were entirely due to this body.—Dr. J. GRAY DUNCANSON mentioned the case of a woman who aborted after taking, amongst other things, a ground nutmeg in gin;

she displayed the symptoms described.—Professor CUSHNY replied.

Professor W. E. DIXON dealt with Arterio-Sclerosis and its Causation. He referred to two theories of causation—(*a*) raising of blood pressure and (*b*) toxic influences, and showed that it had been established conclusively by experiment that arterio-sclerosis could be produced in the lower animals by simply compressing the abdominal aorta for one minute once or twice a day for a comparatively short period. The changes consisted in a drawing out of the elastic fibres and degeneration of the muscular coat, plaques of calcareous material being formed. He explained how this might be brought about in man owing to violent exercise, and more especially was this likely to occur as man grew older, as the rise of blood pressure was then greater after exertion than in youth. Professor Dixon also spoke of the effect of nicotine on the blood pressure, comparing the sudden high rise in the young non-smoker after his first cigar with the slight rise in the moderate smoker and the absence of effect in the habitual smoker. He concluded by stating that man produced a ferment, probably in his liver, which counteracted the effect of nicotine.—Professor CUSHNY hoped that the study of this subject might lead to some advance in treatment. He did not think that the raising of blood pressure in man by the administration, for example, of digitalis would give rise to these changes.—Dr. SAVILL stated that he was surprised to hear that the compression of the abdominal aorta for such short periods in small animals should give rise to so serious changes in the aortic arch as had been described by Professor Dixon.—Mr. MABEN also spoke.

OTOLOGICAL SECTION.

Ménière's Disease.—Primary Epithelioma (?) of the Tympanum.—Exhibition of Cases and Specimens.

A MEETING of this section was held on Feb. 8th, Dr. PETER MCBRIDE, the President, being in the chair.

Mr. H. TILLEY showed a case of Extensive Development of Keloid in the Line of Incision made for Mastoid Operation. Various suggestions with regard to the occurrence of keloid were put forward by members of the section and also methods of treatment. Mr. Tilley proposed to try the x rays and, if not successful, to excise the scar freely.

Dr. D. R. PATERSON showed an unusual case of Cerebellar Abscess in a boy, aged 11 years, who had only been ill three weeks without any apparent sign of middle-ear suppuration. The chief symptoms were tenderness along the posterior border of the mastoid and optic neuritis. The abscess was opened by operation and the patient made an uneventful recovery without impairment of hearing.

Mr. SYDNEY R. SCOTT showed an interesting series of Histological Preparations of the Human Cochlea.

Mr. ARTHUR H. CHEATLE showed a specimen of the Right Temporal Bone of a Man in which, owing to the anatomical arrangement of the cells, it was possible for pus in the antrum to reach the neck without passing through the mastoid process.

Mr. RICHARD LAKE read the notes of a case of Ménière's Disease in a girl aged 14 years.—It was suggested by several members of the section that the cause of the symptoms might be due to congenital syphilis.

Mr. R. STURGEON COCKE showed a Case for Diagnosis—namely, a girl, aged eight years, in whose left mastoid region was situated a hard swelling of about half the size of a pigeon's egg, which had gradually increased in size since it was first noticed 15 months ago.—The members could not agree to a definite diagnosis, which was variously given as a calcified gland, a bony growth, an enchondroma, a solid dermoid, or a new growth. Mr. Cocke was asked to report the result found at operation at the next meeting of the section.

Mr. HUNTER F. TOD showed the following: 1. A case of Vertigo in a man in whom the coördination tests, as suggested by von Stein, demonstrated a definite lesion of the semicircular canals on the right side. 2. An unusually interesting case of Lateral Sinus Thrombosis occurring in a boy aged eight years. A few days after the operation there were facial paralysis on the opposite side, paresis of the sixth nerve on both sides, and optic neuritis on the affected side. For a considerable period the boy was very ill and showed definite signs of basal meningitis. Convalescence was slow and with this complete recovery of all the symptoms. Two months later optic atrophy was noticed on the left (the opposite) side which was now well marked; otherwise the boy was restored to complete health.

Mr. A. L. WHITEHEAD read notes of a case of Primary Epithelioma (?) of the Tympanum, following chronic suppurative otitis media. The first symptom of the disease was an aural polypus which was very vascular and which recurred on removal. Eventually the mastoid operation was performed and the growth was found to extend deeply into the cochlea and petrous bone and forwards involving the orifice of the Eustachian tube. The hæmorrhage during the operation was so profuse as to be almost alarming but was arrested by pressure. Eight weeks after the operation the wound cavity was dry and covered with epithelium. There had been no recurrence since the operation, performed 12 months ago. The pathologist's report stated that the growth had the structure of an atypical carcinoma. A microscopical section was referred to the Morbid Growths Committee for further examination.

Dr. J. BARRY BALL showed a case of a Pulsating Growth in the Left External Auditory Meatus in a man aged 73 years. The patient had consulted Dr. McBride ten years ago who noticed a small growth in the meatus. Since then it had increased slowly and occasionally there had been a sharp attack of hæmorrhage. The growth filled the meatus and protruded slightly from the orifice; there was a distinct expansile pulsation in it which was communicated to the auricle and the pre-auricular region. The growth was presumably angeiomatous in nature.—The question of tying the external carotid artery was discussed but the opinion of the section was that owing to the age of the patient and the duration of the growth it would be wiser to do nothing.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 10th, Dr. J. KINGSTON FOWLER, the President, being in the chair.

Dr. F. DE HAVILLAND HALL showed a case of Ascites treated by Epilopexy. The patient, a man aged 35 years, was admitted into the Westminster Hospital on Nov. 7th, 1907, complaining of swelling of the abdomen. He gave a history of a chancre five years ago; four years ago he had right-sided pleurisy and was at home for eight weeks. He stated that he was a heavy drinker until about the age of 30; since then he had drunk on an average four or five pints of beer daily and occasionally spirits. About 12 months ago he noticed that he was getting thinner and since that time there had been gradual loss of flesh. Four months ago he noticed that he was getting fuller about the abdomen and the swelling had steadily increased up to the time of admission. On admission the patient was thin and sallow. The liver was palpable for about four fingers' breadth below the costal margin; the surface was hard and irregular. There was no jaundice. The abdomen was distended with free fluid. On Nov. 11th and 26th and Dec. 17th the patient was tapped and 9 pints 5 ounces, 10 pints 8 ounces, and 16 pints respectively were drawn off. On Jan. 7th Mr. W. G. Spencer made a vertical incision about two inches long three inches below the ensiform cartilage. The liver was examined and presented white lumps which were regarded as either of syphilitic or malignant origin, probably the former. Another incision was made in the median line below the umbilicus and a drainage-tube inserted; a portion of the great omentum was sutured to the upper wound. On the next day a large quantity of fluid escaped through the drainage-tube; the tube was removed five days later. Since the operation the patient had been treated with liquor hydrargyri perchloridi and iodide of potassium.—In answer to a question by the PRESIDENT, Mr. SPENCER said that patients who had been thus operated on showed enlargement of the superficial veins, sometimes to such an extent that a photograph could be taken of the veins.

Mr. W. H. BATTLE showed a case of Diffuse Cancellous Osteoma of the Femur following Fracture in a boy, aged three and a half years. He was admitted to the Rochester Hospital for a fracture of the right femur on July 11th, 1907. The fracture, which was situated slightly below the middle of the shaft, was caused by a fall from a fence. On August 1st it was noticed that there was an unusual amount of swelling of the thigh; on the 11th this had increased and extended the whole length of the shaft of the femur and measured 14 inches in circumference. On the 14th an examination of the growth was made under an anæsthetic and a piece was removed. This was examined and consisted

at one end of well-formed bone, at the other of young connective tissue, and in the middle showed newly formed cartilage in process of ossification. The swelling continued to grow until the beginning of December when it measured 19 inches; since that time there had been diminution in size. The patient had made no complaint of pain. The tumour was a large fusiform swelling of the right thigh which tapered off below but had a more marked ending above. The bone was completely surrounded but the tumour was less marked posteriorly. It was of stony hardness and of even surface throughout. The thigh measured 14¾ inches at its greatest circumference, the left limb only measuring 7¾ inches. There was slight apparent lengthening. The boy was rather thin but not unhealthy-looking and presented no signs of tumour elsewhere. In the Transactions of the Society, Vol. XXV., p. 327 (1902), there was a reproduction of a photograph of a similar tumour which developed in an older brother, also as a result of fracture of the femur (left). The thigh was amputated at the hip-joint. Rapid recovery followed. In 1903 he had a tumour of the right femur, of the size of an orange and of the same structure as the original growth, as shown by the x rays. In 1907 the femoral tumour had disappeared, but he had a similar tumour of the right tibia. The original growth was found to be of pure bone without sarcomatous elements.

Dr. C. E. BEEVOR showed a case of Prolonged Ataxy after Diphtheria. The patient was a boy, aged 15 years, who on April 10th last was detained at a Metropolitan Asylums Board hospital for four weeks suffering from diphtheria. In the third week of illness the patient had occasional difficulty in swallowing and fluids regurgitated through the nose. This lasted for one week. On leaving the hospital he was very weak in the legs. He had diplopia for a day or two after leaving the hospital. He had had some dyspnœa and palpitation on exertion. There was some "incoördination" in the arms. In the upper extremities there were relative anæsthesia to cotton-wool and relative analgesia to pin-prick extending from the fingers to the elbows and shading off on passing up the limb. In the lower extremities there was stocking type of relative anæsthesia and analgesia. The "joint sense" and muscle pain sense were impaired. The upper extremity tendon-jerks were absent. The knee-jerks and ankle-jerks were absent. The gait was ataxic, the line of progression deviating equally to right and left. The gait was stumbling; the feet were lifted rather high and brought down flat with considerable force. He was unable to stand with the eyes closed when the feet were together. The case was very unusual for the length of time (ten months) from the attack of diphtheria that the symptoms had lasted, and such cases were rare. At the present time there was no definite paralysis but marked ataxy.

Mr. C. GORDON WATSON showed a patient, aged 11 years, who had been operated on for Perforation in Enteric Fever. The patient was admitted on Feb. 19th, 1907, to the Metropolitan Hospital on the fifth day of the disease under the care of Dr. Cautley. Perforation took place on the twenty-sixth day of the disease at 2.10 P.M. Laparotomy was performed within an hour. There were free gas and intestinal contents in the peritoneal cavity. The perforation was about 18 inches from the ileo-cæcal valve; it was closed and a second ulcer on the point of perforating was sutured over. The operation was completed in 21 minutes. Marked general improvement followed the operation.—Dr. BERTRAND DAWSON deprecated too far-reaching conclusions being drawn from one case. In the event of perforation taking place it had to be considered that the patient might get well without operation.—Dr. F. J. POYNTON described a case of enteric fever in which the abdomen was opened where no perforation had occurred but the abdomen was full of fluid swarming with typhoid bacilli.—Dr. E. CAUTLEY said that the advisability of operating for perforation in enteric fever must depend in each instance on the particular circumstances of any given case.

Dr. W. ESSEX WYNTER showed a case of Partial Obstruction of the Superior Vena Cava in a man, aged 43 years. There were cyanosis and venous engorgement of the head and arms, with well-marked clubbing of the fingers, and the liver was enlarged. There was no recognisable affection of the lungs or heart and the urine was normal. A loss of weight of 7 pounds was made good during a month's stay in hospital. The condition appeared to be referable to partial obstruction of the superior vena cava, either by thrombosis or some dilatation of the first part of the aortic arch, though the local signs were not obvious. Polycythæmia had been considered but it was hardly supported by the blood count.

Mr. H. J. WARING showed a case of Traumatic Myositis Ossificans. The patient, a boy, aged 17 years, was admitted to St. Bartholomew's Hospital on account of backward dislocation of both bones of the right forearm. The dislocation was reduced and an internal angular splint applied. Subsequently there was considerable limitation of movement at the right elbow-joint and a distinct hard swelling was discovered in the right antecubital fossa, on the deep aspect of the biceps and brachialis anticus, the brachial artery being pushed to the inner side. On operation this was removed from the deep aspect of the brachialis anticus and was not found attached to the bone.—The case was discussed by Dr. CAUTLEY, Mr. F. C. WALLIS, and Mr. WATSON who referred to the 87 cases of osseous formations in and about muscles due to injury described by Mr. Robert Jones and Mr. David J. Morgan.

Mr. WALLIS showed a case of Tumour treated by X Rays. The patient, a woman, aged 39 years, was admitted to Charing Cross Hospital suffering from respiratory obstruction due to pressure on the trachea caused by a growth. The growth was first noticed six months previously to admission and she felt some pain at the root of the neck and there was also some swelling. This increased until she had some difficulty in breathing. She also had great difficulty in swallowing and was losing flesh. When admitted her breathing was difficult and distressing. She sat up in bed, leaning well forward and having an anxious expression. There was a large swelling above the mediastinum, making the chest and throat one continuous line. There was another swelling in the left supraclavicular fossa and the trachea was pushed over to the right side for nearly one and a half inches. The cephalic vein in the left arm was very prominent and the glands in both axillæ were large, moveable, and hard. Percussion showed that the growth extended into the anterior mediastinum as far as the second intercostal space and the breath sounds in both lungs were generally deficient. The movements of the vocal cords were normal. The patient commenced x ray treatment on Jan. 15th and this was continued daily for over 14 days. Since Feb. 1st she had had three exposures a week with marked beneficial results which became obvious after the first week and a steady improvement had continued ever since, so that the woman could now breathe easily in the semi-prone position and could lie on her side. She slept well and could swallow and the growth was rapidly disappearing. A blood count showed that the patient was not suffering from splenic leukæmia and the growth in the opinion of Mr. Wallis was a lymphosarcoma. The growth had not been examined microscopically.—Dr. J. H. DRYSDALE related a case of sarcoma that improved under x ray treatment but eventually resulted fatally. He thought that the tumour described by Mr. Wallis might be a lymphadenoma.—Dr. R. C. B. WALL discussed the case from the point of view of Hodgkin's disease, and after Dr. W. H. WILLCOX had suggested that the tuberculin reaction might have been tried Mr. WALLIS replied.

Mr. WALLIS also showed a case of Ununited Fracture of the Femur with a Hoefftcke's splint applied.

Dr. ROBERT HUTCHISON showed a case of Splenomegalic Polycythæmia and Dr. WILLCOX a boy with Symmetrical Polyarthritis of the Hands.

Dr. WALL showed a case of Syphilitic Infiltration of the Superior Mediastinum.

Dr. MORGAN DOCKRELL showed three cases of Ulerythema.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

Congenital Hypertrophic Stenosis of the Pylorus.—Exhibition of Cases.

A MEETING of this society was held on Jan. 17th, Mr. SYDNEY STEPHENSON being in the chair.

Dr. GEORGE CARPENTER read notes of a case of Congenital Hypertrophic Stenosis of the Pylorus which he had treated in conjunction with Dr. D. J. Munro of Brixton and which had recovered under medical treatment, dieting, lavage, and drugs being the methods employed. He described the course of the case fully and then discussed the pathology and treatment of the condition. He considered that hypertrophic stenosis of the pylorus was a congenital abnormality of development and not a secondary muscular spasm, and maintained that similar cases should receive more thorough medical and dietetic treatment and that surgical intervention should not be invoked in the early stages. We hope to publish Dr. Carpenter's paper in full in a future issue.

Dr. EDMUND CAUTLEY read a paper on the Pathology of Congenital Hypertrophy of the Pylorus in Relation to Treatment. Accepting the view that there is such an affection as pyloric spasm and that the action of the pylorus is that of the closed door which only opens in response to duodenal stimuli, he argued that there was no evidence that spasm could cause hypertrophy. Almost all physicians had found antispasmodic drugs of no value in treating pyloric hypertrophy, a remarkable fact if the symptoms were due to spasm grafted on to, or causing, hypertrophy. Moreover, spasm might occur at any age, and yet these cases of hypertrophy were peculiar to the first few months of life, and there was no evidence of spasm at a later age causing hypertrophy. Recovery from pyloric spasm under medical treatment, in cases mistaken for true hypertrophy, had led to an unduly favourable estimate of the value of medical treatment in true hypertrophy. The latter affection varied from a degree of hyperplasia which was fatal unless treated surgically, down to a slight hyperplasia which was compatible with life, if no secondary effects occurred. These effects—viz., dilatation of the stomach, gastric catarrh, and occasionally acute œdema of the pyloric mucosa—were due to contraction of the muscle. In mild cases the degree of contraction might prevent sufficient nutritive food passing through the pylorus and yet not set up the secondary symptoms. Three of his cases had been of this type and under medical treatment had succumbed to marasmus, although food was present in the intestines after death. It was these cases in particular that made a person critical of the assumed value of diet and lavage. Drugs he had found useless. A diet of whey or albumin water, carefully regulated, would suit such cases for a time but as soon as the strength of the food was increased the secondary symptoms arose. On the assumption that the condition was induced by hyperchlorhydria cases had been treated by undiluted cow's milk. Such a food had proved useless in his hands and he suspected that the successful cases were due to pyloric spasm. Recent observations by Miller and Willcox supported the view that there is no excess of acid in these cases and all clinical and pathological evidence was in favour of the weak nutritive fluid rather than undiluted milk. Lavage would be useful in hyperchlorhydria and pyloric spasm but could hardly be expected to be of value in cases of mild hypertrophy without secondary symptoms. It seemed unnecessary if food was passing through the pylorus, if vomiting was absent, and if there was little or no dilatation. There were undoubted cases of this type. It was of great value in curing secondary dilatation and gastritis, but it only cured these secondary effects and not the hypertrophy and might place the child in the *status quo ante*. Then if the degree of hypertrophy and contraction was compatible with life the child might recover. He regarded it as of vital importance to differentiate spasm from hypertrophy and thought that the medical treatment of true hypertrophy should not be unduly prolonged. The greater the degree of marasmus previously to operation the smaller was the chance of the child's recovery.

Dr. G. A. SUTHERLAND protested against the assumption that if pyloric stenosis were cured medically it must have been in such a mild form that it would have recovered without treatment. Operation was a very serious matter and many infants who had stood the operation died afterwards from bowel trouble of some sort. He did not think that for a complete diagnosis one should be able to feel a pyloric tumour, as the pylorus was a very uncertain thing to feel in an infant. The diagnosis could be made if vomiting, constipation, wasting, and marked visible peristalsis were present. Where trouble arose when breast milk was given the fault was not with the milk but with the manner of feeding. Small feeds of the most digestible materials were required and if there was a residue of food left in the stomach after washing out for a day or two the infant was not having suitable food.

Mr. J. P. LOCKHART MUMMERY said that it was scarcely possible to have a more unsuitable subject for a severe operation. The child was very young and badly nourished and had probably been vomiting all the nourishment given for some days before. Very few cases died on the table. The only patients in whom the prospect of operation was good were those seen early before there had been wasting and in whom there was a fair amount of fat.

Dr. CHARLES W. CHAPMAN said that in the condition under discussion there was a great deal of irritation causing the closure and he was therefore surprised that no one had suggested the administration of carbonate of bismuth. It might be given freely in as much as teaspoonful doses.

Mr. HUGH LETT said that the members were much indebted to the readers of the papers as the subject was one of great importance. Surgical treatment was a very serious matter and in many cases by the time the surgeon was called in the condition was practically hopeless. The physician should be clear at the beginning of his treatment how long he would continue medical measures, lest by unduly prolonging them the prospects of operation were affected. He advocated the claims of gastro-enterostomy as being simpler than pyloroplasty and safer than Loreta's operation.

Dr. REGINALD H. MILLER suggested that the symptoms of pyloric stenosis were entirely referable to spasm. First, because of the onset of the disease. At the Clinical Society of London last year 40 cases were collected and in 70 per cent. of them the onset did not occur until the third or fourth week of life. He had a case in which diarrhœa preceded the onset of the symptoms. It was true that many babies vomited from birth but not sufficiently to cause wasting, and the well-marked constipation was frequently absent during the first two or three weeks of life. That suggested that there was not marked blocking at the pylorus as a congenital lesion. Again, even though the baby were not saved by lavage and careful dieting, he or she usually died from diarrhœa, showing that the pylorus was once again patent and that something had happened, for presumably the spasm had been relaxed. Such cases strongly simulated the real condition which Dr. Cautley referred to, and he (Dr. Miller) thought that they were quite identical. It was difficult to say what was the cause of the spasm, but he thought that it was due to a congenital defect in the gastric juice, and he had tried to find what that defect was in the observations alluded to by Dr. Cautley; he believed the so-called hyperacidity was not the cause. It would be a very engaging idea if it were so. Hyperacidity was found in babies who ran a different course, generally getting well in a few weeks. The hyperacidity of pyloric spasm occurred in older and less wasted children, the tongue was clean, and there was no true peristalsis so that the viscus stood up on palpation. There was Mr. Clinton T. Dent's well-known fœtus in which the pylorus was found hypertrophied. He regarded spasm of the pylorus as the entire cause of the symptoms of the condition, if not of the disease itself.

Dr. T. R. WHIPHAM showed a case of Congenital Heart Disease in a girl, aged 17 years, who showed no cyanosis or clubbing.

Dr. J. PORTER PARKINSON showed a case of Synovitis of the Knee-joint without pain or tenderness in a boy, aged seven years. The patient was the subject of congenital syphilis and the effusion followed periostitis of both tibiæ.

Dr. SUTHERLAND showed: 1. A case of Cretinism. The patient, a boy, aged nine years, was seen in November, 1907, when typical signs of cretinism were present. He improved markedly under thyroid treatment. Growth in the long bones was very delayed and pituitary extract had been given without any benefit so far. 2. A case of Tuberculous Peritonitis in a girl nine years old. When first seen in September, 1907, the case seemed hopeless. There had been signs of tuberculous peritonitis for five months. The patient, who was wasted and in a stuporous condition, suffered from diarrhœa and had delirium at night and hallucinations during the day. She was now convalescent and the signs of active tuberculosis had subsided, although the abdomen was still distended.

Dr. MCMASTER (for Dr. L. G. GUTHRIE) showed a case of Acute Polioencephalitis following Measles. The patient, a girl, aged five years, was well nourished and intelligent but had spastic diplegia. There were no ocular symptoms. There was weakness of the muscles of the back so that she could not sit upright and could not hold her head up. The condition simulated one of congenital spastic diplegia.

Mr. LOCKHART MUMMERY showed a case of Supernumerary Auricles in an infant, on both sides of the head, situated just in front of the external auditory meatus in the position of the inter-maxillary cleft.

LIVERPOOL MEDICAL INSTITUTION.

The Physics of the Mitral Regurgitant Murmur.

A MEETING of this society was held on Jan. 16th, Mr. THOMAS H. BICKERTON, the President, being in the chair.

Dr. T. R. BRADSHAW read a paper on the Physics of the Mitral Regurgitant Murmur, especially with regard to its audibility at the heart's apex. He assumed the correctness of

the views held by George Balfour, Chaveau, Marey, and others that murmurs were due to the vibrations of the "fluid veins" formed in the space beyond the narrowing. The difficulty in explaining the mitral regurgitant murmur on this theory was that it was heard at a point (the apex) in the opposite direction to the "fluid vein," which was directed towards the auricle; no explanation quite satisfactory had ever been offered. Dr. Bradshaw's explanation was that the sonorous "fluid vein" lay between the two curtains of the mitral valve and that its vibrations transmitted to the cone of blood passed through the thin walls without damping and set up vibrations in the ventricle. The vibrations were heard best at the apex, because the walls of the ventricles were thinned at this spot and this spot was most accessible to auscultation. He exhibited an apparatus constructed to show that sonorous vibrations could under similar conditions be conducted in a retrograde manner.—The paper was discussed by the PRESIDENT, Sir JAMES BARR, Professor L. R. WILBERFORCE, Dr. J. LLOYD ROBERTS, and Dr. R. J. M. BUCHANAN, and Dr. BRADSHAW replied.

The Production of Pseudo-arthrosis at the Hip-joint.—Volkmann's Ischæmic Paralysis.—Paralytic Calcaneo-cavus.—The Diagnosis and Treatment of Ectopic Gestation.

A MEETING of this society was held on Jan. 30th, the PRESIDENT being in the chair.

Mr. ROBERT JONES described his operation for the Production of Pseudo-arthrosis at the Hip joint without disarticulation of the femoral head. The great trochanter was first separated from the shaft by a broad osteotome and the neck of the femur either divided or removed, and the trochanter was screwed on to the head of the femur which lay in the acetabulum. The operation might be employed in all varieties of bony ankylosis but was eminently suited for old people with malum coxæ senilis where the shock of disarticulation was serious. Mr. Jones also described his procedure in the treatment of Volkmann's Ischæmic Paralysis and his operation in Paralytic Calcaneo-cavus.—The communication was discussed by the PRESIDENT, Mr. W. T. THOMAS, Mr. G. P. NEWBOLT, and Dr. J. H. ABRAM, and Mr. JONES replied.

Dr H. BRIGGS read a paper on the Diagnosis and Treatment of Ectopic Gestation mainly founded upon a clinical study of 124 cases of interrupted early gestation marked by physical signs and symptoms at or before the end of the second month. Deducted from an inclusive total of 139 cases, all of them treated by operation, the 124 cases left 15 others, nine at from two to six months, two at six months, three about the full term, and one nine years after the full term, not included in the paper. The earliest disturbances amongst the 124 early ectopic gestation sacs occurred after intervals of six, 10, and 18 days beyond the cessation of a previous normal and regular menstruation. For the group of clinical symptoms and signs indicative of these disturbances Dr. Briggs 15 years ago had instituted and since adopted the term *peritoneal crisis*. He maintained that the symptoms and signs of sudden onset were often moderate or mild and that even trivial, locally recurrent pains, together with slight, irregular menstrual and intermenstrual blood loss, were not to be construed as harmless or insignificant until the physical signs had been closely watched or waited for. A more prompt appreciation of their significance and of what may lie before the patient would lead to earlier and easier and safer operations and to the more frequent recognition (with the Trendelenburg position for operation) of "unruptured tubes" and a little free intraperitoneal blood even in cases where the acute peritoneal crisis had been recent and severe. To postpone operation was to incur adhesions and hæmatocele sacs in their various forms. The peritubal (Sänger and Taylor) and the paratubal (Sampson Handley) hæmatocele sacs for their intact removal must be in a suitable physical condition; earlier and later in their course the physical conditions might defy intact removal. Intact removal was not indispensable, but the handling of organised and organising tissues, especially of adherent blood clots, or simply draining them, did not diminish the post-operative risks. Localised hæmatocele sacs as intraperitoneal formations subsequently to originally free intraperitoneal hæmorrhages possessed a stage at which there was both free and localised blood; the free blood outside the hæmatocele sac in process of absorption might be accepted as evidence of secondary rupture of the tubal or hæmatocele sac. Dr. Briggs believed that the older statistics of the prevalence of tubal rupture were inaccurate in consequence of the frequency with which gestation sacs were torn or ruptured by the fingers of the operator. In the future the continued use of the Trendelenburg posture, lending sight and light to the lower abdomen, would show, as it had shown in his more recent experience, that gestation sacs before operation were rarely ruptured. Werth and Taylor and Bland-Sutton had established their respective contributions to the process of tubal abortion. Dr. Briggs produced old gestation sacs, nine years old downwards, to demonstrate what may remain in a latent or an active form in the patient after apparently successful expectant treatment. During the first ten years up to the end of 1897 one vaginal and 20 abdominal sections, compared with the second ten years 17 vaginal and 101 abdominal sections, denoted a change from expectant to operative methods in his practice. He showed from nine of his cases bilateral lesions, on one side a tubal gestation sac and on the other a pyosalpinx once; a small ovarian cyst twice; and old, adherent, inflamed tubes six times, masking the diagnosis of ectopic gestation from the symptoms. A three years old and a recent tubal pregnancy on opposite sides coexisted in one case. A second tubal pregnancy on the opposite side had been treated by a second operation in three of his patients. Dr. Briggs referred to a paper which he himself read in 1897 in which he had produced evidence that intraperitoneal hæmorrhage and hæmatocele were occasionally associated with lesions other than those of ectopic pregnancy. The very rare rapid fatalities associated with tubal rupture formed a very small class of their own; operative treatment if at hand was almost excluded by the brief space of time available. "To operate," says Dr. F. H. Champneys, "during the state of shock is in many cases to kill the patient." Dr. Briggs said that he had invariably acted on this principle and he showed a series of ectopic sacs successfully removed from patients after they had recovered partially or wholly from a peritoneal crisis. The severity of a peritoneal crisis was no certain measure of the amount of hæmorrhage. He was of opinion that, with this exception, delay in the operative treatment of ectopic gestation increased its dangers. There were two deaths following operative treatment amongst his 124 cases: (*a*) after an unusually troublesome and risky operation amidst dense adhesions in a patient who had refused operation for appendage disease three months previously; and (*b*) after the operation for abdominal drainage of a very large hæmatocele in a very anæmic woman; death resulted from anæmia.—The paper was discussed by the PRESIDENT, Dr. T. B. GRIMSDALE, and Dr. J. GEMMELL, and Dr. BRIGGS replied.

Ascites and Tumours of the Ovary.—Exhibition of Specimens.

A MEETING of the pathological section of this society was held on Feb. 6th, the PRESIDENT being in the chair.

Dr. E. EMRYS-ROBERTS read a paper upon Ascites and Tumours of the Ovary. After a brief historical sketch of the subject he pointed out that the tendency of modern investigation was to assign to the cells of the peritoneum a more active rôle in the production of ascites than was formerly thought to be the case. Malignant disease of the peritoneum might possess an irritative or toxic property and the ascites might be called a peritonitic exudation as truly as in the case of infective peritonitis. In certain cases the ascites might possibly be the product of the cancerous growth. Ascites accompanying tumours of the ovary might result from certain necrotic changes in the tumours or from torsion of their pedicles. At other times the fluid might be accounted for by concurrent disease, while in certain tumours the ascites was actually the product of the epithelium of these new growths, as, for example, superficial papillomata and cystomata with ruptured walls.—Dr. H. BRIGGS thought that the needful work in reference to hydroperitoneum and papillomatous growths had yet to be done. So far the evidence was inconclusive.

Dr. JOHN HAY showed a Saccular Aneurysm of the Aorta of the size of a small orange situated beyond the origin of the left subclavian artery. Death was due to rupture into the left pleural cavity. Blood had previously leaked into the anterior wall of the pericardial sac forming a large hæmatoma in the tissues of the pericardium and leading to dyspnœa. The patient survived the rupture for four days.

Mr. G. P. NEWBOLT showed a Volvulus of the Small Intestine removed from a boy, aged 10 years, who was admitted with symptoms of intestinal obstruction. The upper part of the jejunum was twisted around a large caseous mesenteric gland which had been torn open by the torsion

of the bowel, and peritonitis was present. An end-to-end anastomosis of the resected gut was performed but the patient only lived 36 hours after the operation.

Mr. F. T. PAUL and Mr. FRANK A. G. JEANS showed: 1. Hydatid Cyst of Retrorenal Tissue. The kidney, which was stretched over the cyst, was removed with it. There were no urinary symptoms. 2. A Chronic Ileo-colic Intussusception from a man, aged 23 years. The operation involved removal of the ileum, cæcum, the ascending, and half the transverse, colon. 3. A Carcinoma of the Transverse Colon. An immediate end-to-end anastomosis had been attempted with fatal result.

Dr. R. J. M. BUCHANAN showed specimens of Myelocytes from a case of Myelogenous Leukæmia. The cells had been washed twice with sodium citrate solution and once with normal saline solution in the centrifuge. On staining the films with Leishmann's stain the myelocytes showed long flagella projecting from the surface and were more granular, the granules responding to the stain in the same manner as the nuclei. In some of the flagella a few granules could be seen, while into others strands of nuclear chromatin extended. These flagella did not resemble pseudopodia and the cells in which they occurred were slightly if at all amœboid.

Professor A. M. PATERSON exhibited Specimens and Models illustrating the Normal Form of the Stomach, and variations from the normal type, including several examples of "hour-glass" stomach resulting from hypertrophy of the circular muscular coat of the organ between the cardiac and pyloric portions.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

The Treatment of Gastric Ulcer.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 31st, Dr. J. ALLAN, the President, being in the chair.

Dr. A. G. BARRS and Mr. B. G. A. MOYNIHAN opened a discussion on the Treatment of Gastric Ulcer.

Dr. BARRS said that the rapid rise and striking success of the surgical treatment of gastric ulcer had invested the subject with a new interest and a greater importance, whilst the responsibility of the physician had proportionately increased, for with him still rested, and very properly so, the duty of determining in any given case whether medical or surgical treatment should be adopted, and it was only by maintaining him in his position of judge of first instance that unnecessary, and therefore unjustifiable, operations were to be avoided. The first and by far the most important question the physician had to decide in the treatment of any case of gastric ulcer was whether the case was one for medical treatment at all. He said that was a question to which he had up to a certain point no difficulty in making an answer which he thought would be generally accepted. The following cases, he thought, should be handed over to the surgeon without delay: (1) all perforations or suspected perforations; (2) all cases in which visible and palpable signs were present, due either to perigastritis or dilatation; (3) probably all male cases; (4) many of the older female cases, in which gastric ulcer was rarely got rid of without operation and in which duodenal ulcer was not infrequently present; and (5) all cases which, though having no visible or palpable signs, resist prolonged and efficient medical treatment, especially those with repeated hæmatemesis, even though the hæmatemesis was small in quantity. Where no definite lesion in the stomach was detected when the abdomen was opened he would suggest that no gastro-entero-tomy should be done. No cases of first hæmatemesis should be treated by operation and he thought that in no case of repeated hæmatemesis should an operation be performed during the actual bleeding. He said this because the surgeon's present method of dealing with hæmatemesis was not scientific. He (the surgeon) could not help it but it was usually impossible for him to deal directly with the bleeding point. When all these had been disposed of the physician was left with a large class of cases, represented most commonly by the young unmarried woman, frequently a domestic servant but rarely a cook, whose complaint was of months, or possibly years, of great suffering (frequently with striking intermissions) from severe gastric pains which were usually, but not always, aggravated by food and relieved by vomiting, with or without occasional and profuse hæmatemesis along with profound anæmia and cachexia. These young women were, as a rule, poor meat-eaters by nature, and many of them had had their teeth destroyed by the medicinal use of iron. Of physical signs in the abdomen in these cases there were none save superficial sensitiveness in Head's gastric area and tenderness on pressure in the epigastrium. The area of tenderness was, as a rule, quite definite and easily covered by the end of a thumb. This was the type of case which it was customary to treat by medical means and apparently with much success. Almost all of these patients were entered as "cured" when they left the hospital. But gastric ulcer was a very inveterate and long-drawn-out disorder, and many of the so-called "cures" were, he was afraid, very temporary affairs. Patients returned again and again, especially the older ones, until, as a last resort, gastro-enterostomy had to be done; so that in regard to these cases he would say that medical treatment should always be tried for a reasonably long period of time; but if frequent relapses occurred and above all if frequent hæmorrhages—large or small—occurred gastro-enterostomy should be done. But his experience of the surgical treatment of the intractable cases of this class, without definite physical signs, had not been without its disappointments, for it was obvious that the more definitely mechanical the causes of the symptoms were the more certainly were they relieved by the purely mechanical procedures of the surgeon; that was to say, surgery was most successful in cases where the ulcer had produced mechanical defects in the stomach. What then should be regarded as efficient medical treatment? The most essential part of medical treatment was prolonged and complete rest in bed; without that all other means were of no avail whatever. To make a diagnosis of gastric ulcer, whether it turned out to be right or wrong, and, at the same time, to allow the patient to be out of bed, was, to his mind, an unpardonable inconsistency. The moment a patient was even suspected of gastric ulcer she should be put to bed. He was not permitted to enter into the question of diagnosis but he would like to say that they ought *not* to insist upon the presence of hæmatemesis or even of vomiting before making a working diagnosis of gastric ulcer. Having put the patient to bed what next was to be done? The general public, and possibly many of the profession, still thought that diet was the most important thing in the treatment of gastric disorders. As time went on his system of dietetics became simpler and simpler, and he thought that any adult patient (except perhaps a diabetic subject) who could not take ordinary articles of diet—that is, solid food—had better take no food at all and lie in bed and drink water until he could. He never ordered milk for patients with gastric ulcer; he repudiated entirely the old practice of saying to a patient with gastric ulcer, "A milk diet or your life." He wished they could see the same reduction in the milk bills of the hospitals as recent years had seen in their alcohol bills. He could not understand how they as a profession could go on countenancing milk drinking in bulk by adult patients and the public at large, knowing as they did that it was probably the surest way of introducing the tubercle bacillus as well as other pathogenic organisms into their bodies. Bulk was a much more important consideration in the food of a patient suffering from gastric ulcer than *kind*, and small meals of meat and stale bread (if they could be taken *without pain and not unless*), along with water in any reasonable quantity to drink, was the food which he usually suggested, but if there were vomiting no food should be given, only plain fresh water to drink. He never used nutrient enemata or nutrient suppositories, but if vomiting prevented the taking of water by the mouth normal saline injections or injections of a solution of glucose should be employed. Enemata of any kind were not infrequently very distressing to patients and might induce vomiting. No patient with gastric ulcer should be allowed to leave her bed until she had taken ordinary mixed solid food at the ordinary meal times for ten days at least, ten days of food not only without pain but with enjoyment. He never ordered any form of artificial or artificially digested food for anybody, or any of the so-called digestives. For medicine he had great faith in bismuth carbonate in large doses given in plain water and not in the gummy mixtures which were at one time in vogue. It should be given 20 minutes before food was taken into the stomach. If there was very much pain a little morphine—say five or ten minims of the solution of morphine—could be given along with the

bismuth powder. If there was constipation, and there usually was, a rhubarb pill or some other simple vegetable laxative might be given twice or three times daily after food, so as to insure a natural action of the bowels once daily without straining and without purging. He did not give saline purges in gastric ulcer. Local applications of heat to the abdomen gave ease to the patient. All severe forms of counter irritation, such as blisters and mustard poultices, he never used; iron was most undesirable for patients suffering from gastric ulcer, however anæmic they might be. In the treatment of hæmatemesis he adopted the same plan: absolute rest of body and mind, by morphine if necessary, and water drinking sufficient to allay thirst, not by teaspoonfuls but three or four ounces at a time. He had no faith in so-called hæmostatic drugs in internal bleeding, but saw no objection to the use of such harmless and tasteless things as chloride of calcium, for example. Suprarenal extract might be, perhaps should be, used, but it was a powerful substance and should be given with care. Patients suffering from recent and severe hæmatemesis were never hungry and therefore did not require food. After three clear days from the cessation of the hæmatemesis food such as meat, eggs, and stale bread might be given, if the patient wished but not otherwise. After hæmatemesis the patient should be kept in bed until the anæmia had largely, if not entirely, disappeared.

Mr. MOYNIHAN dealt with the Surgical Treatment of Gastric Ulcer. He differentiated between acute ulcer, in which only the mucous surface of the stomach was as a rule involved, and chronic ulcer, in which the destructive and reparative processes had together involved all the coats of the stomach, so that the ulcer was a visible, palpable, and demonstrable lesion. In acute ulceration surgical treatment was never necessary on account of hæmorrhage and rarely on account of perforation. In his own series of 37 cases of perforating ulcer there was only one in which the ulcer was acute; in the remainder it was a chronic ulcer, the symptoms of which had been present for months or years and had been recently more acute. Gastro-enterostomy in addition to closure of the ulcer was called for if there were other ulcers or if the closure of the ulcer was likely to cause obstruction. Hæmorrhage in chronic ulcer rarely called for urgent operation; an interval of freedom from bleeding should be chosen. Excision of the ulcer, or its infolding, the vessels supplying the ulcer being secured, and gastro-enterostomy were usually to be practised. Chronic ulcer of the stomach or of the duodenum was held to be a condition which should in all cases be treated by operation. The difficulty in some cases in arriving at a diagnosis was referred to and the opinion expressed that in most cases an exact diagnosis was attainable, and that in many the position of the ulcer could be predicted. If, however, after the abdomen had been opened, an inspection of it revealed no lesion, there was no indication for any operation upon the stomach itself. In no circumstances whatever and in compliance with no persuasion, however insistent, should the surgeon consent to perform gastro-enterostomy in the absence of definite demonstrable organic disease. If an ulcer were found near the pylorus, on either side, gastro-enterostomy should be performed, and, if possible, the ulcer should be infolded, to prevent perforation or hæmorrhage, both of which had occurred after gastro-enterostomy. If the ulcer was on the lesser curvature in the cardiac half of the stomach it should be excised; gastro-enterostomy in such cases gave only slight and temporary relief. When multiple ulcers were present in the pyloric region, or when a doubt existed as to the malignancy of the condition, Rodman's operation, excision of the ulcer-bearing area, was indicated. The method of gastro-enterostomy which gave the best results was the posterior operation, the jejunum being applied almost vertically to the stomach, and the anastomosis being made as close to the flexure as possible.

The PRESIDENT, Dr. J. E. EDDISON, Mr. E. SOLLY, Mr. W. R. BATES, Mr. J. STEWART, Mr R. LAWFORD KNAGGS, Mr. N. PORRITT, Dr. A. CHRISTIE WILSON, Dr. E. S. LEWER, Mr. H. COLLINSON, Mr. H. H. GREENWOOD, and Dr. H. SECKER WALKER took part in the discussion, and Dr. BARRS and Mr. MOYNIHAN replied.

Mr. H. LITTLEWOOD showed: 1. A patient suffering from Pyloric Stenosis on whom gastro-enterostomy had been performed in June, 1907. The patient's weight before operation was 3 stones 7 pounds, and the present weight was 7 stones 12½ pounds. 2. A specimen of Thrombosis of some Vessels in part of the Transverse Colon producing Intestinal Obstruction. 3. A Gall-bladder, with Stones, removed from a girl 18 years of age. The gall-bladder was contained in a complete mesentery extending from the liver to the colon.

Dr. J. B. HELLIER showed a Sarcomatous Growth removed from an Old Abdominal Cicatrix.

Mr. J. F. DOBSON showed a specimen from a case of Abscess in the Great Omentum with Diffuse Peritonitis. Almost the whole of the omentum was removed.

Specimens and cases were also shown by Mr. WALTER THOMPSON, Dr. CARLTON OLDFIELD, Mr. E. WARD, Mr. KNAGGS, the PRESIDENT, and Mr. MOYNIHAN.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Removal of Submaxillary Gland.—Electrolysis in Medicine and Surgery.—Empyema.

A MEETING of this society was held on Feb. 5th, Dr. GEORGE HUNTER, Vice-President, being in the chair.

Mr. F. M. CAIRD demonstrated a patient after removal of a Submaxillary Gland. The patient had been shown at the previous meeting as one from whom Mr. Caird had removed one half of the tongue for carcinoma. The submaxillary gland after this became enlarged and cirrhotic but Mr. Caird did not think that it was the seat of cancer. Most of the surgeons present at the meeting recommended removal as they thought that it was malignant. The gland was removed and though examined carefully by pathologists no trace of malignant disease was found. It was merely an inflamed and cirrhotic gland. This was important as regards the prognosis.

Dr. DAWSON F. D. TURNER read a paper on Electrolysis in Medicine and Surgery. He said that the human body was an electrolyte, and electrical currents were only conveyed through it by the migration of ions (electrified particles of matter). Only those drugs which broke up into ions could be made use of—e.g., aqueous solutions. Oils, alcohols, and glycerines did not form ions; the spiritus chloroformi and the glycerinum acidi carbolici could not be introduced electrolytically; for this reason they were more toxic in aqueous solutions when taken by the mouth. If an individual were to place each hand in a separate basin of salt water, and if these were connected with the terminals of a source of electric supply, then at the anode or basin connected to the + pole the body would lose its anions and receive cations, while at the cathode or basin connected with the − pole the body would lose its cations and receive anions. The anions were constituted by the acid radicle or elements and the cations by the metallic radicle or metals. Thus oxygen, chlorine, sulphion, and hydroxyl were anions; while hydrogen, sodium, and copper were cations. When sodium chloride was dissolved in water its molecules dissociated into ions or particles with opposite electrical charges; the anions were charged negatively and would therefore be attracted to the anode, and the cations were charged positively and would be attracted to the negative pole or cathode. In this case Na + was the cation and Cl − was the anion. At the anode the body would yield up chlorine and receive sodium, while at the cathode it would give up sodium and receive chlorine. Between each electrode there would be a migration of ions, the Cl − ions would be moving to the anode and the Na + ions to the cathode. If a piece of raw beef were taken and electrodes applied to either side with some blotting paper soaked in a solution of potassium iodide under the − electrode and some blotting paper soaked in starch between the + electrode and the beef, it would be found that on passing a current the blotting paper at the + pole would become blue, showing that iodine had been carried through the beef. In the same way metallic ions might be conveyed into the tissues of living beings. A rabbit might be poisoned by having strychnine carried into its tissues from the anode moistened with the salt of this alkaloid. To what useful purposes could this introduction of ions into the body be put? Rodent ulcer, parasitic affections, sinus and fistula, ankylosis, sclerosis, fibrous adhesions, stricture, tic douloureux, neuralgia, sciatica, and rheumatic and gouty conditions were all benefited by this treatment. Leduc reported the complete cure at a single sitting of a case of rodent ulcer by the introduction of the zinc ion from sulphate of zinc. As a rule, however, more than one application was necessary. The ulcer should be cleaned and from

eight to ten layers of the lint cut a very little larger than the size of the ulcer should be soaked in a 5 per cent. solution of zinc sulphate. The positive electrode (of zinc) must be connected with this and the negative pole to a basin of salt water into which the patient's hand is placed. The current must be gradually raised to from 40 to 60 milliampères or as much as the patient can bear conveniently and continued for 30 minutes. At the end of this time the surface of the ulcer would be whitened and dry. Another application might be made in a week or a fortnight. Many cases had been successfully treated by Dr. Turner in this way. Chronic ulcers were also amenable to the zinc ion. In fibrous ankylosis and sclerosis the chlorine ion or hydroxyl OH would be found of service. A case of Dupuytren's contraction of the fingers of 15 years' duration which had yielded to this treatment was shown. Even sclerosis of the spinal cord could be attacked and cases of spastic paralysis which had been treated by Dr. Turner in this way had benefited remarkably. A case of tic douloureux which had proved refractory to other remedies yielded to the electrolytic introduction of the salicylic ion.—Dr. A. D. WEBSTER and Dr. HUNTER took part in the discussion.

Mr. ALBERT E. MORISON read a paper on 100 Consecutive Cases of Empyema. As regards the physics of pleural effusions he said: 1. That the intrapleural pressure was positive in purulent effusions, while in normal conditions the pressure was negative. 2. That an effusion into the pleural cavity first showed itself as an area of dulness (*a*) just below the angle of the scapula, (*b*) in the left axilla between the fifth and eighth ribs, (*c*) in obliteration of Traube's semilunar tympanitic space, and (*d*) in the right front near the angle made by the cardiac and hepatic lines of dulness. 3. That a disappearing effusion was last manifest in the axillary line between the fifth and eighth ribs. 4. That the root of the lung was its fixed point, and that with increasing effusion the lung became compressed round it. 5. That the re-expanding lung last touched the chest wall at a point diagonally farthest from its fixed point—i.e., in the axilla about the fifth interspace. This was the point of election for incision and drainage in cases of general purulent effusion and was the site of natural evacuation in cases of empyema necessitatis. 6. The lung did not tend to collapse on its fixed point when air was admitted into the pleural cavity, the intrapulmonary pressure being quite sufficient to maintain the two layers of pleura in contact, except for a small area round the point of entrance of the air. As regards the causes of empyema he said that: 1. Pleuro-pneumonia caused 91 per cent. of his cases. 2. Pleuritis was the cause in 4 per cent. It was generally agreed that if pleural effusions became purulent septic infection through dirty needles was almost invariably the cause. 3. Tubercle of the lungs was the cause in 3 per cent. and empyema followed a pneumothorax. 4. Septic disease of the abdominal organs accounted for only one case. 5. Streptococcic or staphylococcic infection of the lung. One case, due to osteomyelitis of the ribs, had occurred in his practice. Mr. Morison discussed at length the diagnosis of empyema and then considered the prognosis. This, he said, was as a rule good so far as life was concerned, the mortality in his series of cases being only 3 per cent. Natural cure might take place by: 1. Absorption of pus; this occurred in one case in which the parents of a child refused operation, the case being verified by puncture. 2. Spontaneous evacuation through a bronchus resulted in the cure of two cases, while in ten cases large quantities of pus had been expectorated prior to operation. 3. Discharge of pus into organs adjacent to the pleura (œsophagus and stomach). This could only occur where the accumulation was large and the disease prolonged. 4. Spontaneous evacuation through the chest wall (empyema necessitatis) occurred in five cases, subsequent operation being required. This was the most unsatisfactory of all forms of spontaneous evacuation. It usually occurred through or above the fifth interspace and œdema of the chest wall was a common signal. Recovery might follow in a few cases but the majority died from exhaustion or waxy disease. Four of these cases were cured by Estlander's operation, and the fifth by ordinary incision and drainage. 5. Surgical treatment offered the best results both immediate and remote. Mr. Morison's cases proved that uncomplicated empyema treated with proper surgical care was not a serious disease. Death in his three fatal cases was due to bronchitis, marasmus, and cerebro-spinal meningitis respectively. The perfect recovery of those operated on was also most satisfactory and months afterwards when examined, except for the scar, it was impossible to say which side had been affected. The average duration of treatment from the date of incision to the completion of healing was 32 days. In the treatment aspiration was only of service where the dyspnœa was great or where some complication rendered operative interference inadvisable. Whenever these were overcome operation should be performed. As regards operation it was advisable to administer a general anæsthetic to children while adults might be operated on with much greater safety under the influence of local anæsthesia. Chloroform was the best anæsthetic but the patient must never be moved from the dorsal position. The position of the pus should first be located by the needle and the site of incision which Mr. Morison usually selected was in the sixth interspace just in front of the posterior axillary line. A vertical incision was made through the skin and a horizontal one through the muscles along the upper border of the seventh rib into the pleural cavity; sinus forceps were then introduced and the wound was dilated by withdrawing them open. An indiarubber tube a quarter of an inch in diameter and two inches long was introduced and prevented from slipping in by a safety-pin being passed through its free extremity. As soon as the discharge became small the tube was cut in half. The wound was dressed with corrosive sublimate wool and changed twice or thrice during the first day and subsequently once daily, and later every second day. Resection of the rib was needful in some cases but generally was meddlesome surgery. As helping the expansion of the lung the patient was encouraged, as soon as out of bed, to make inspiratory efforts (running upstairs, playing wind instruments, &c.). The conclusions to be drawn were that (1) pleuro-pneumonia was the most frequent cause of empyema; (2) that empyema rarely followed pleurisy with effusion; (3) that in adults empyema was more likely than in children to be secondary to serious lung disease; (4) that the diagnosis of empyema was not always easy; (5) that the exploring needle should be used in all doubtful cases and in more than one situation; (6) that there was no danger in using the needle with proper care; (7) that the immediate prognosis in uncomplicated empyema by incision and drainage was good; (8) that the remote prognosis was excellent, no deformity following and no sequelæ resulting; (9) that careful asepsis must be carried out; and (10) that resection of the rib was needful in some neglected cases but generally was meddlesome surgery.—Dr. J. O. AFFLECK expressed his approval in the main of Mr. Morison's contentions.—Dr. W. RUSSELL said that he was glad Mr. Morison did not remove a portion of rib in operating and yet got such good results. Mr. Morison had not referred to one special means of investigating difficult cases following pneumonia—namely, the leucocyte count. When a pneumonia was succeeded by empyema there was a great bound upwards in the number of leucocytes; in his last case there was a sudden rise from 25,000 to 40,000 or 45,000. It was not always easy to be satisfied that there was *not* pus in the pleural cavity. Dr. Russell did not think that bronchial breathing was ever heard over fluid, but it was present over compressed lung immediately above fluid. As regards acute fœtid empyema, he did not think that it was necessarily secondary to an abdominal lesion. The majority of acute fœtid empyemata occurred on the left side and commenced as cases of diaphragmatic pleurisy and owed their fœtor to the proximity of the colon on the left side.—Mr. CAIRD said that in the case of children it was obviously wise to use a general anæsthetic and it was rarely necessary to excise a portion of rib in such patients. In the case of adults it was better to employ a local anæsthetic and to remove a portion of rib.—Dr. ALEXANDER JAMES said that physical signs were of little importance if the empyema were small and localised, but he advocated the use of the exploring needle frequently. He thought that a great many cases of empyema discharged through a bronchus and cured themselves naturally.—Dr. ALEXANDER GOODALL and Dr. HUNTER took part in the discussion.—In his reply Mr. MORISON said that he never resected the rib unless the case was septic and that he obtained quite sufficient drainage without this. He thought that bronchial breathing could be heard, and especially in children, when the layer of fluid was thin. He had met with cases of fœtid empyema on the right side and was of opinion that they were the result of lymphatic infection from abdominal abscesses. It was much more common to meet with a mixed infection in adults, and such

were not so rapidly recovered from as those due to simple pneumococcal infection.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 29th, at 20, Hanover-square, London, Dr. A. F. Street (Westgate-on-Sea) being in the chair.—Dr. R. Fortescue Fox re-introduced the adjourned discussion on the paper of Dr. W. Edgecombe (Harrogate), on Blood Pressure in Spa Practice, which was read on Dec. 11th, 1907. He dwelt upon the importance of vaso-motor tone as a factor in arterial blood pressure. Abnormalities of pressure were, in fact, in the first instance nervous disorders, and balneological treatment, here as elsewhere, took effect to a large extent through the nerve centres. The effect of baths (sub-thermal) at a temperature between that of the blood and the skin was unquestionable in reducing excessive vaso-constriction and therefore blood pressure. Dr. Fox described a hereditary type of "poor circulation" in gouty families, for which hyperthermal spa baths afforded the best treatment. In middle and later life a judicious course of cooler baths relaxed arterial spasm and delayed for many years the development of incurable high tension. In disorders of the climacteric and other vaso-motor ataxias spa treatment was usually efficient, but sub-thermal baths must be employed with a sedative effect in view.—Mr. J. P. Lockhart Mummery said that he had done a lot of experimental work upon blood pressure and that in his opinion it was advisable to use only the pulse obliteration point (systolic pressure) and that the so-called diastolic pressure was quite useless and untrustworthy, and there was no proof that it was diastolic pressure; in fact, experimental evidence was opposed to its being diastolic pressure. He gave the figures from a series of experiments showing that the systolic pressure as estimated by the Riva-Rocci instrument is correct to within two millimetres of Hg. He also pointed out that the Riva-Rocci instrument with a straight manometer tube is the most trustworthy, and that with the U tube any error of reading was doubled.—Dr. Alfred Mantle (Harrogate) said that disturbances of the peripheral circulation materially affected the general blood pressure. Several types of circulation were noticeable. Cold subjects having a tendency to an abnormal contraction of the peripheral circulation were met with, and as a result of a diminished quantity of blood in the cutaneous reservoir, there was an increased amount in the splanchnic and other areas which in time might produce gastric, hepatic, renal, or cardiac complications. In another type the periphery was dilated, and such people were always warm, and he had observed them to be more subject to cutaneous diseases, also to glycosuria. The importance of what might be called the "skin heart" in regulating the blood pressure was too little appreciated.—Dr. William Ewart referred to the prevailing view that the tortuosity of arteries is the result of long-continued high pressure. In his experience tortuosity sometimes occurred in hypotensive subjects and should not therefore be accepted as positive evidence of high tension.—Dr. Street said that abnormalities of blood pressure were undoubtedly due to vaso-motor disorder, but peripheral vaso-motor abnormality did not connote serious disturbance. The wide variation of individual vaso-motor control in man was illustrated by a consideration of the functions of the vaso-motor system in the woodpecker, the sloth, and marine mammalia generally. If arterial tortuosity was the result of high tension, what was the cause of the tortuosity common in superficial veins in the lower extremity?—Mr. C. W. Buckley (Buxton) said that the treatment of the early stages of high blood pressure by sub-thermal baths, as suggested by Dr. Fox, was most important and at certain continental spas had been made a speciality. The treatment of gout in Buxton for generations had followed those lines, showing that empirical methods were based on sound principles. Referring to the remarks of another speaker, he pointed out that there were many English springs of great value as diuretics and that it was not necessary to go abroad for such waters.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 7th, Dr. W. Langdon Brown, the President, being in the chair.—Dr. T. G. Stevens read a paper on the Nature and Treatment of Puerperal Eclampsia. After defining the condition and enumerating its classical symptoms he said that scanty urine and a low urea coefficient were more important signs than the amount of albumin. As regards pathology, the most widely accepted view was that of auto-intoxication, the mother poisoning herself by the effects of constipation and by the products of metabolism. The liver failed to alter the toxins formed by metabolism and the kidneys were unable to excrete them, so albuminuria and eclampsia were produced. Post mortem, there was necrosis of the renal epithelium with fatty and granular degeneration—i.e., the kind of kidney found in diphtheritic poisoning. The liver nearly always showed small hæmorrhages and patches of necrosis and a fatty degeneration as seen in acute yellow atrophy. Death might be directly due to the toxins, to œdema of the lungs, to sepsis as the result of operation, or to poisoning by such drugs as strychnine, morphine, and pilocarpine. The prognosis was bad if the fits were more than 15 in number, if the temperature progressively rose, if the urine was almost suppressed, and if delivery could not be quickly performed. In the treatment of fits morphine was the best method and it should be given in large doses as there was no danger to the kidneys, for morphine dilated the renal blood-vessels and caused diuresis. Half a grain hypodermically should be given at once, and if in two hours the patient was not under its influence another quarter of a grain should be given. Chloroform did not abolish fits but only decreased their violence. The toxæmia ought to be treated by infusion of saline solution, croton oil, washing out the stomach and the colon, and venesection in a full-blooded plethoric patient. Delivery stopped the fits in 54 per cent. of the cases, so if the patient was in labour she should be delivered as soon as possible.—Dr. Eardley L. Holland, who took part in the discussion, advised the German method of immediate rapid delivery, whatever the stage of labour, without any preliminary palliative measures. The cervix could be rapidly dilated with Bossi's dilator, but if it were still intact vaginal Cæsarean section should be performed. He laid it down as a rule that if the first convulsion were severe rapid delivery ought to be done, but if the first convulsion were mild then palliative measures might be tried.

Reviews and Notices of Books.

Anatomie und Aetiologie der Genitalprolapse beim Weibe. (*Anatomy and Etiology of Prolapse of the Female Genital Organs.*) By Dr. JOSEF HALBAN and Professor JULIUS TANDLER. With 60 plates and 44 figures in the text. Vienna and Leipsic: Wilhelm Braumüller. 1907. Pp. 273. Price, paper, M.18; M.15. Bound, M.21; M.17.50.

THE work already published by Professor Julius Tandler and Dr. Josef Halban on the "Topography of the Ureters" is of so high an order of merit that we began the perusal of this work with a feeling that it was sure to be of great value and interest. Nor are we at all disappointed. The book contains a very full and extremely able account of the anatomy and etiology of prolapse of the uterus, preceded by a description of the normal position and means of support of the female pelvic organs, and followed by some considerations on the treatment of prolapse of the uterus by pessaries and by operations.

From their anatomical researches the authors come to the conclusion which anyone who has studied the subject would expect—namely, that all the tissues connected on the one side to the uterus and on the other to the pelvic walls play a part in the fixation of the pelvic organs. The structures, however, which overcome the tendency to prolapse of the pelvic organs resulting from an increase in the intra-abdominal pressure, and which play the most important part in maintaining the position of the pelvic contents, are the muscles of the pelvic floor. How important a part they play is well illustrated by the conditions met with in cases of congenital prolapse dependent on the presence of a spina bifida in which the fourth sacral nerve is involved. We need hardly say that the conclusions arrived at do not in any way favour the theory which has recently been put forward that the supports of

the uterus are mainly to be found in the connective-tissue sheaths of the vessels. The description given of the anatomy and etiology of prolapse of the pelvic organs is founded on a careful examination of no less than 40 specimens of this condition, all of which were very exhaustively studied either by means of sections or of dissections. A large part of the work consists of 60 plates illustrating 34 of these cases. These full-page plates, many of them coloured, are beautifully reproduced and are of the highest artistic and scientific value.

The anatomical changes which occur in all the various structures involved in cases of prolapse are considered in full detail and then the authors pass on to the most interesting part of their work—namely, that dealing with the etiology of this common condition in the female. As a result of their anatomical and other researches the authors favour the following explanation of the occurrence of prolapse of the uterus. They believe that a prolapse will occur when the opening normally existing in the pelvic floor is insufficiently closed so that it forms what may be termed a "hernial aperture." Any increase in the intra-abdominal pressure tends to force through this aperture all those organs or parts of organs which may be situated over it or in its immediate neighbourhood. If, for example, the whole of the uterus is placed over the opening, total prolapse of that organ will result from such increased intra-abdominal pressure; while if a part only of the uterus is so situated some form of partial prolapse is likely to occur. The intra-abdominal pressure tends to force through the imperfectly closed opening in the pelvic floor that part of the uterus lying over it, but the rest of the organ by the same pressure will be firmly pressed against its underlying supports and so retained in its position. The natural resistance to any descent of the pelvic organs is derived from the support which they receive from the bony walls of the pelvis and the muscular pelvic diaphragm. Any injury leading to stretching of these soft parts and insufficiency of their normal power of supporting the pelvic organs and closing the aperture in the pelvic floor will inevitably produce a tendency to prolapse, as will also a deficiency in the bony walls of the pelvis, as is exemplified in cases of split pelvis in which secondary prolapse is not uncommon. On such a theory not only can all the common forms of prolapse be readily explained but the anatomical changes which are found in the different tissues affected can be adequately accounted for. It accounts for the elongation of the cervix and of the body of the uterus which is so often met with, for the different degrees of descent of the anterior and posterior vaginal walls, for the varying degrees of hypertrophy of the anterior or posterior lips of the cervix, and for the occurrence of congenital prolapse, especially when associated with spina bifida.

The book must be read to appreciate the large amount of evidence which is adduced in support of the theory put forward; for this we must refer our readers to the work itself and to a careful study of the illustrations of actual cases and dissections. Finally, after a chapter on the experimental study of the causation of prolapse of the uterus the authors consider shortly its treatment by pessaries and various operative methods.

The book is one of great interest and value, the amount of work which it embodies is prodigious, the illustrations are most excellent, and the whole work is worthy of the high reputation of the writers.

The Standard Family Physician. Three volumes. London and New York: Funk and Wagnalls Company. 1907.

THE title page to this publication is so striking that we have not copied its contents under the title of the work as is our usual custom when considering books sent to us for review. The work is termed "A Practical International Encyclopædia of Medicine and Hygiene, especially prepared for the Household." It is stated to have been "edited by" Sir James Crichton-Browne, M.D., LL.D., F.R.S., Sir William H. Broadbent, Bart., K.C.V.O., M.D., F.R.S., Dr. Alfred T. Schofield, Professor Karl Reissig (Hamburg), and Dr. Smith Ely Jelliffe (New York), "with the assistance of many European and American specialists in the treatment of diseases and experts in medicine and surgery." Reproductions of photographs of Sir James Crichton-Browne, the late Sir William Broadbent, and Dr. Schofield respectively appear as frontispieces to the three volumes into which the work is divided. The work commences with an unsigned article on "The Family Physician"; then follows a paper by Dr. Schofield entitled "The Journey of Life and the Laws of Health"; next appears a reprint of Sir James Crichton-Browne's Cavendish lecture on "Dreamy Mental States"; and next a contribution by the late Sir William Broadbent on the Prevention of Consumption and Other Forms of Tuberculosis, written in a popular manner and containing information likely to be useful to lay readers.

The next portion of the work is taken up with an article entitled "Structure and Functions of the Healthy Human Body." The information contained therein would be redundant to a medical practitioner and useless to a lay reader. The remainder of the publication is devoted to a sort of medical dictionary, stated (in an advertisement) to be "the greatest international work of medical reference for the home that has ever been produced." Perhaps the less said about this strange production the better. We admit that some of the information given may be useful "in the home," but a large portion is likely to be only misleading and to give rise to unnecessary alarm to those not acquainted with medical science. Some of the directions given are peculiar. For instance, under the heading "Death" we find the following: "Quiet and consolation should surround the dying person. He should be kept clean and comfortable until he has drawn his last breath, and even after that."

The volumes are profusely illustrated. Many of the diagrams are, in our opinion, totally unsuited for a work "for the home," and some are liable to give rise to false impressions, especially the diagrams supposed to illustrate "areas of pain." The books when sent to THE LANCET Offices were accompanied by an advertisement. We feel sure that the physicians whose names appear on it could not have been cognisant of the manner in which their participation in the publication would be made use of.

The Hygiene of Armies (Περὶ Ὑγιεινῆς τῶν Στρατευμάτων). By S. K. ZAVITZIANOS, M.D. Corfu: A. Lantza. Pp. 253.

Dr. Zavitzianos deals in this interesting book very thoroughly with the numerous aspects of an important subject. Though written in Greek, and more especially in relation to the Greek army, the book may be said to be of general interest, a careful and minute study of records and official reports having enabled the author to marshal a great array of facts and statistics in relation to the practical working of the Army Medical Services in all European countries, as well as in Japan, Persia, Siam, and the United States, from about the time of the Crimean war to the present day. The author's survey of the hygienic conditions prevailing in the different armies in peace and war time, but especially the latter, and his study of the subject generally have resulted in a firm conviction on his part that no great measure of success can be obtained in the medical treatment of troops by the system of employing a medical staff exclusively devoted to military service and unsupported by civilian coöperation. Basing his statement on known events in almost all recent wars, he affirms that no army medical service organised in this way has been, or is

ever likely to be, really efficient. The scheme proposed by Dr. Zavitzianos for the Greek army is to abolish the army medical service altogether and to organise a service of civilian medical men, to be called upon in time of war or whenever needed, not exclusively attached to the army but able to practise independently, and therefore with opportunities of keeping pace with new scientific developments and with liberty to specialise. This scheme is worked out and supported by many arguments, and the suggestion and discussion of it form the main purpose of the book which concludes with chapters on military buildings, on the food and clothing of troops, and on their intellectual development.

Dr. Zavitzianos intends to publish a French translation of his book shortly and we are glad to learn this from him. French is more or less known to most medical men and many of our readers would, we think, like to have the information in "The Hygiene of Armies" before them. The similarity of Dr. Zavitzianos's views with those expressed by the Director-General of the Royal Army Medical Corps, Sir Alfred H. Keogh, in so many medical centres is noticeable, though our circumstances and those in Greece are so different. Of course there can be no idea with us of dispensing with our excellent army medical service, the hope is to reinforce it by an adequate and economical reserve.

Immune Sera: A Concise Exposition of our Present Knowledge Concerning the Constitution and Mode of Action of Antitoxins, Agglutinins, Hæmolysins, Bacteriolysins, Precipitins, Cytotoxins, and Opsonins. By Dr. CHARLES FREDERICK BOLDUAN, Bacteriologist, Research Laboratory, Department of Health, City of New York. Second edition, rewritten. London: Chapman and Hall, Limited. New York: John Wiley and Sons. 1907. Pp. 154. Price $1.50.

THIS little book gives a very clear and satisfactory account of the various bodies which are known to exist in immune serums. It starts with a short historical account of the subject and then describes the mode of preparation of diphtheria antitoxin. Ehrlich's theories as to the relations of toxins and antitoxins are next set forth and also the opposing views of Arrhenius and of Bordet. It is very properly stated that at present the exact truth is not determined. Agglutinins, bacteriolysins, hæmolysins, and precipitins are next discussed and the practical applications of our knowledge of these bodies to the recognition of bloodstains. Some good diagrams are given to explain the nature of group-agglutinins. Cytotoxins are briefly dealt with and the value of opsonic determinations is criticised; the author is impressed with the degree of error inseparable from the methods employed and also with the divergence between the clinical course of many cases and the fluctuations of the opsonic index. Three pages are devoted to the subject of snake-venoms but no allusion is made to the interesting work of Kyes in isolating the lecithids of cobra poison, chemical compounds of lecithin with the copula or amboceptor present in the venom. The final section is devoted to a discussion of the phenomena of serum-sickness in man and of the allied, if not identical, condition termed anaphylaxis as observed in experiments on animals. Dr. Bolduan appears to greater advantage as an original author than as a translator and gives a very readable account of the difficult and highly technical matters with which he deals. We commend the book to all who are desirous of gaining a first acquaintance with recent work in the field of immunity.

LIBRARY TABLE.

A Text-book of Organic Chemistry. By A. F. HOLLEMAN, Ph.D., F.R.A. Amst. Translated from the third Dutch edition by A. JAMIESON WALKER, Ph.D. Heidelberg, B.A.; assisted by OWEN E MOTT, Ph.D. Heidelberg. Second English edition rewritten. London: Chapman and Hall, Limited. New York: Wiley and Sons. 1907. Pp. 589. Price 10*s.* 6*d.* net.—The multiplicity of organic compounds is an invariable stumbling-block to the student commencing to read organic chemistry and he had far better take as a first course a book which, like the one under review, presents a limited number of facts and yet gives prominence to the theory underlying the subject than one in which so many apparently disconnected details are dealt with. Professor Holleman's text-book is deservedly popular, the original Dutch edition having been translated into an English, a German, a Russian, and an Italian edition respectively. The success which has so far attended its publication is due, we think, to the author's gift of discriminating between principles and facts which are immediately essential to the beginner's grasp of the subject and those which, at all events, in his early studies, only conspire to upset, so to speak, his mental digestion by reason of their wealth and intricacy. Throughout the story is told step by step in simple terms, and it is not easy to preserve, as is done in this text-book, a continuity of treatment with such a vast subject as the chemistry of the carbon compounds. The present edition also is in touch with the results of recent developments, for in the chapter on the constitution of benzene the recent researches on this subject are discussed, which would appear to show that not one of the graphic formulæ suggested affords a completely satisfactory explanation of observed facts. The chapter on pyrrol also has been made to fall into line with the fruits of investigation contributed by Professor Ciamician in a recent lecture before the German Chemical Society. The nature of reactions is interpreted in the light of the theory of "ions." The translation is ably done and we have only noted two misprints, one in the author's preface to the first edition and the other in the heading on p. 447. It may be remarked also that the translator has retained the word "proteids" which English physiologists and chemists have agreed to call "proteins."

Die Experimentelle Diagnostik, Serumtherapie und Prophylaxe der Infektionskrankheiten. (*Experimental Diagnosis, Serum-therapeutics and Prophylaxis of the Infectious Diseases.*) Von Stabsarzt Professor Dr. E. MARX. Second edition. Berlin: August Hirschwald. 1907. Pp. 398. Price 8 marks.—We are glad to welcome a second edition of Professor Marx's little book. The main features of the former edition are preserved but the author has added chapters dealing with the general principles of immunity and with infections due to the bacillus fusiformis and to trypanosomes. He has also added an index which materially increases the value of the volume. Advances in knowledge since the first edition appeared have been so great as to necessitate the rewriting of much of the contents and the size of the whole has increased by just 100 pages, or about one-third of its original bulk. The particular specimen before us is marred by the bad sewing which used to characterise nearly all foreign paper-bound books and which we hoped was becoming less common. Well bound in cloth it should make a handy book; the print is clear and the use of black type for headings facilitates reference.

Tests and Studies of the Ocular Muscles. By ERNEST E. MADDOX, M.D. Edin., F.R.C.S. Edin., Ophthalmic Surgeon to the Royal Victoria Hospital, Bournemouth. With 110 illustrations. Second edition. Philadelphia: The Keystone Publishing Company. 1907. Pp. 261.—We welcome the second edition of Dr. Maddox's well-known treatise on the ocular muscles. It is doubtless due to the exigencies of copyright that the book has been published in America. Whilst we regret the necessity it has the compensation of bringing more nearly to the notice of American ophthalmologists a level-headed presentation of the subject which contrasts favourably with the many indigenous productions, some of

which we have recently reviewed. It is a pleasure to find that the book remains essentially the same as in the first edition. It has not been overweighted with new matter and it still, better than most books, enables the reader to distinguish between facts and the inordinate accretions of conjecture. No better introduction to the subject could be placed in the student's hands.

JOURNALS AND MAGAZINES.

Proceedings of the Royal Society of Medicine. Vol. I., Nos. 2 and 3.—The excellent start which the Royal Society of Medicine made with the first number of its proceedings has been well maintained in its successors. It is not our purpose to review these publications at any length as the papers and cases with which they deal have as a rule been reported in our columns before their appearance in the society's literature. The second number records many interesting cases in the Clinical, Dermatological, and Laryngological Sections, the last part of the important debate on Pneumonia, followed by a paper on the Pathology of Epilepsy, by Dr. Alfred E. Russell, with the subsequent discussion, in the Medical Section, and in the remaining sections the following cases: The X Ray Diagnosis of Renal and Ureteral Calculi, by Dr. G. Harrison Orton; Medical Inspection in Schools: the Gloucestershire System, by Dr. Myer Coplans; Pubiotomy, by Dr. Thomas Wilson; An Analysis of 274 Additional Cases of Goitre Removed by Operation, by Mr. James Berry; the Therapeutics of Indigestion, by Dr. William Murray; Some Tropical Diseases and the Remedies required for their Treatment and Prophylaxis, by Mr. James Cantlie; A Contribution to the Study of the Relationship between Avian and Human Tuberculosis, by Mr. S. G. Shattock, Dr. C. G. Seligmann, Mr. L. S. Dudgeon, and Dr. P. N. Panton; Some Experiences with the Tuberculin Ophthalmic Reaction, by Mr. L. J. Austin and Dr. Otto Grünbaum; Abscess of Bone caused by an Intermediate Bacillus (P.) allied to B. Paratyphosus, by Dr. F. G. Bushnell; Some Notes on the Growth of the Jaws, by Mr. J. T. Carter; and the Effects of Chronic Suppuration in the Molar of a Horse, by Mr. J. G. Turner. In the January number (No. 3) there are reports of cases and specimens from the Clinical, Dermatological, Laryngological, Obstetrical, Otological, and Surgical Sections; a Presidential Address to the Otological Section, by Dr. Peter McBride, dealing with the development of aural surgery; a discussion on the Diagnostic Value of the Roentgen Rays in Diseases of the Chest, introduced by Dr. A. Stanley Green, and amongst the papers are the following: On the Present Means of Combating the Plague, by Professor W. M. Haffkine, C.I.E., and Protection of India from Invasion by Bubonic Plague, by Dr. J. Ashburton Thompson; Some Peculiarities of Cerebral Gummata, by Dr. J. S. Collier; the Supports of the Pelvic Viscera, by Dr. W. E. Fothergill; a Case of Complete Gastrectomy, by Mr. B. G. A. Moynihan; Cases of Cholecystectomy, by Mr. J. D. Malcolm; the Action of Digitalis on the Human Heart, by Dr. James Mackenzie; and the Reminiscences of an Apprentice Fifty Years Ago, by Mr. W. Soper.

The Journal of Nervous and Mental Diseases (New York).—In the December, 1907, issue of this journal there is an interesting paper by Dr. Lewellys Barker and Dr. Frank J. Sladen of Baltimore on Acrocyanosis Chronica Anæsthetica with Gangrene; its Relations to Other Diseases, especially to Erythromelalgia and Raynaud's Disease. Also among the proceedings of the American Neurological Association reported in this number will be found a discussion on Heredity in Diseases of the Nervous System, in which many well-known authorities expressed their opinions. The subject is viewed from a wide standpoint and the report of the proceedings will be found instructive to anyone collecting data on this topic. The account of the New York Neurological Society contains a discussion on the Antisyphilitic Treatment of Tabes and Paresis, and most of the speakers were agreed that this form of treatment was very unsatisfactory in these diseases and indeed that in many instances it aggravated rather than relieved the symptoms; further, that probably in most of those cases in which permanent good was derived the condition was rather one of pseudo-paresis than the true disease. This number also contains other matter of instruction and interest.

New Inventions.

X RAY PLATES.

WE are glad to find that at last a really serious effort is being made to produce a satisfactory x ray plate in this country. We have received from Ilford, Limited, Ilford, London, E., samples of x ray plates which as regards the ultimate result quite equal and even excel that of any imported plate we have ever tried. They give full density, plenty of contrast, and abundant detail. It must be admitted, however, that they require a rather longer exposure than some plates of foreign make. While the length of exposure is a matter of secondary importance in most cases, there is no doubt that other things being equal radiographers will unquestionably use those plates which require the least exposure, not only as an extra precaution against any undesired epilation or dermatitis but in the radiography of fidgety people and children, the saving of time generally, and on account of the reduced wear and tear of x ray tubes. No doubt in due course emulsions will be prepared having a greater sensitiveness to the x rays.

There would appear to be some confusion in the minds of the makers as to the relation that exists in the sensitiveness of the haloid salts of silver to ordinary daylight and to the rays from an x ray tube. As a matter of practical experience we have found that all ordinary photographic plates, whether "process," "slow," "extra rapid," or by whatever term they are described, have about an equal sensitiveness to the x rays, the "rapid" varieties not necessarily being more rapid than the slower grades. Another noteworthy fact is that it is difficult, and at times impossible, to get sufficient density when an ordinary photographic plate is used for radiographic purposes. This seems to be due to the thinness of the coating, which, though thick enough for the purposes of ordinary photography, does not react correspondingly under the influence of the x rays. To get over this difficulty thicker coatings have been used, and while this scheme answers up to a certain point the fact remains that some x ray plates of foreign manufacture produce results with comparatively brief exposures such as we have been unable to obtain with plates of British manufacture. In justice to the Ilford x ray plates we should say that in every case where we have used both an Ilford plate and one of the best obtainable plates of foreign origin upon the same part of the same patient and under exactly similar conditions except the length of exposure, the resulting negative has been better in the case of the Ilford. In all cases the plates were fully exposed, so that longer exposure in either case would have been detrimental. We welcome and recommend the Ilford x ray plates. Ilford, Limited, appear to be working along the proper lines and we fully expect that before very long we shall have available an x ray plate of home manufacture at least the equal of any other.

UNIVERSITY OF CAMBRIDGE.—The following appointments have been made:—Electors to the following Professorships: Anatomy, Dr. D. MacAlister; Medicine (Downing), Sir Lauder Brunton; Physiology, Dr. W. H. Gaskell; Surgery, Mr. H. H. Clutton; and Pathology, Dr. L. Humphry.—Dr. Humphry has been coöpted a member of the degree committee of the Special Board for Medicine.—Mr. Raymond Johnson, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed an Examiner in Surgery for the Third M.B. in place of Mr. H. G. Barling who is unable to examine.—Mr. J. S. Gardiner, M.A. of Caius College, has been reappointed demonstrator in animal morphology for five years.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 15, 1908.

The Children Bill.

PEOPLE of all shades of political opinion can hardly withhold a welcome from the first of the Government Bills for the present session, for it has been framed on lines of common humanity and not of partisanship; indeed, some may think that its utility has been impaired by the omission of all proposals regarding which there is likely to be any serious difference of opinion, but the Government has probably been well advised in doing what it could to insure the Bill an easy passage into the Statute-book. The object of the measure, as lucidly expounded by Mr. HERBERT SAMUEL who moved its first reading on Feb. 10th, is to "consolidate and amend the law relating to the protection of children and young persons, reformatory and industrial schools, and juvenile offenders, and otherwise to amend the law with respect to children and young persons." "Young persons" means those under 16 years of age and "children" those under 14 years. The question of education has, of course, been left for consideration in another measure and that of the admission of children to public-houses will be dealt with in the Licensing Bill. For the rest, the Bill is a notable attempt to codify all the existing Acts relating to child protection and to strengthen them by many new clauses. We do not propose to consider these now in detail but will allude briefly to the chief of them. Perhaps the most welcome are those which seek to exclude children and young persons from the police courts and the common gaols; which suggest the provision of special courts, which shall not be public, to try juvenile offenders; and which propose to prohibit the imprisonment of persons under 16 years of age, with very few special exceptions. It is also proposed to make parents bear the responsibility for rearing young criminals by being made in some instances to pay their fines. A section of the Bill deals with smoking by juveniles, and in accordance with the recommendation of the two committees which have considered the matter prohibits the sale of cigarettes or cigarette papers to persons under 16 years of age and makes it a punishable offence for such children to be caught smoking in the street. How the London policeman is to diagnose the age of the offending child is not suggested but whatever may be the difficulties of administration there is no doubt that it will benefit the whole community, except perhaps the cheap tobacco merchants. The fact that the evils of cigarette-smoking have been exaggerated by many worthy but unscientific folk must never blind us to two things—first, that any considerable amount of smoking is actually very bad for the young; and secondly, that the lad who wants to be perpetually smoking about the streets is modelling his manners upon a bad example and consequently running moral risks. An attempt is to be made to bring the children who are brought up in vagrancy within the reach of the education authorities and to give them some of the ordinary advantages of civilisation. The Act for the Prevention of Cruelty to Children is strengthened and parents are to be made punishable if their children are killed through their carelessness, either by overlying or burning, and we think that the rough and ready distinction thus indicated between accident and criminal negligence is quite a sound one. The penalty is to be light unless drunkenness can be proved.

An important section of the Bill deals with the protection of infant life. In a recent issue[1] we commented on the exemption from inspection under the present law of persons rearing one child only for gain. The Government proposes to appoint a select committee to take evidence on this point and hopes that the House will have received its report by the time when the Bill has reached its later stages. We have for some years given our readers evidence that leaves us in no doubt of the expediency of making compulsory the inspection of all children put out to nurse for a consideration. A smaller matter, but a useful one, is the proposal to legalise the State inspection of all charitable institutions and homes for destitute children. This is as it should be and we hope that in discussing the Bill Members will forget that it is being introduced by a party and thus will help the defenceless children of this country to a charter of their rights and liberties of which any country might be proud.

Rats and Public Health.

AN association was recently formed to wage a war of extermination against rats, and we published at the time an abstract of the sermon of the modern PETER HERMIT, Sir JAMES CRICHTON-BROWNE, when preaching a crusade against a very ancient enemy. The address which he delivered at the meeting held under the chairmanship of Sir LAUDER BRUNTON was fervent and vigorous. He attacked rats as a personal enemy, giving voice to the powerful antipathy against these vermin which has been common to many men in other ages than our own. This dislike of rats, which nowadays appears to have so scientific a basis, depended in the first instance upon selfish and sentimental prejudices. Rats were hated on account of their bodily characters, their evil feeding habits, and their predatory nature; but now the tide of feeling runs high against them because they have been adjudged guilty of harbouring and disseminating the flea which is almost certainly an important means of propagating plague. It is hardly necessary to remind our readers of the case which has been made out against Mus rattus in this evil respect but we will briefly refer to the two chief pieces of evidence which have been recorded in these columns. In the issue of July 27th, 1907, p. 248, we published an abstract of the reports issued by the Advisory Committee appointed by the Secretary of State for India, the Royal Society, and the Lister Institute of Preventive Medicine regarding the causes and control of plague in India. This detailed the very clever and complete series of experiments devised

[1] THE LANCET, Jan. 25th, 1908, p. 244.

and carried out by Major GEORGE LAMB, I.M.S., Captain W. GLEN LISTON, I.M.S., and the other members of the working commission of the committee both by means of plague-stricken rats kept in experimental "go-downs" and by observations in private houses. These experiments proved conclusively that the rat does spread plague through the agency of the fleas which have bitten it. The other piece of evidence has been brought forward by Dr. J. ASHBURTON THOMPSON, the permanent head of the Department of Public Health in New South Wales, whose report on the mode of spread and prevention of plague in Australia appeared in abstract in THE LANCET of Oct. 19th, 1907, p. 1104. He demonstrated that in the Sydney epidemics there has always been a close association between plague in rats and man, the one preceding the other, and that the chronicity of the epizootic is an important clue to the recurrence of the disease in man. Dr. THOMPSON does not consider the common European rat, Mus decumanus, immune from the possibility of acquiring plague but fully accepts the doctrine of the spread of plague by the fleas which infest the rat. Another disease which has been certainly laid to the score of Mus decumanus is trichinosis which is fortunately very rarely seen in this country but is a serious menace to those peoples who habitually eat half-raw and often rat-fed pork.

The chief indictment which Sir JAMES CRICHTON-BROWNE brought against the English rat was the economic one when he said:—

> No more destructive animal existed. Nothing came amiss to its chiselling teeth and insatiable maw. It made heavy depredations on fields of corn, on stack-yards, granaries, and ship cargoes; it devoured eggs, killed poultry and game, made unwelcome visits to dairies and pantries, butchers' shops, and bakeries; it gnawed through lead pipes, causing household floods, and it was even suspected of arson by nibbling the insulating material on crossing electric wires and so short-circuiting them.

This is doubtless all very true and even the most tender-hearted of animal lovers would scarcely urge as a serious excuse for such conduct that the rat must gnaw not only for food but in order to keep down his rapidly growing incisor teeth which otherwise might kill him by a literal lock-jaw; but to our minds the indictment of the rat on the score of his menace to public health is far heavier than any that can be brought on the score of his mischievous propensities. It is interesting to note that the rat has not been always an object of execration. Amongst Scandinavian and Teutonic races rats and mice were reverenced as being the souls of the dead, while BARING-GOULD in his paper on the famous Bishop HATTO myth, shows that the army of rats which devoured the unfortunate prelate undoubtedly symbolised the host of poor wretches burnt by him in the barn. He points out, however, that Bishop HATTO was a most maligned and kind-hearted man, and that stories of similar character have been told of prominent personages in Scandinavia, Switzerland, Bavaria, Poland, and even Asia. BARING-GOULD thinks the origin of them may have been human sacrifices of chieftains by savage tribes in time of famine, the victims being given as a propitiation to be devoured by hungry rats. If rats were not liked in ancient days they would seem to have been respected, and this feeling still obtains among primitive or superstitious folk. It is certainly present in India, to her misfortune.

We consider that the public attention which has been called by modern scientific work to the peril which rats form to a community is a matter of great importance to our Empire, and we welcome the formation of a league for their extermination, hoping that the public mind will not relegate the scheme to the ranks of the faddists. But the new association has an enormous task before it if its members seek to exterminate the countless millions of rats, of which most are inaccessible, in the British Empire. An agressive policy has, it is true, been successfully carried out in places. In THE LANCET of Oct. 19th, 1907, p. 1099, we commented on the observations of Lieutenant-Colonel A. BUCHANAN, I.M.S., on the relation between the keeping of cats and the incidence of plague in Indian villages. He is convinced that cat-keeping abolishes the rats and consequently plague. The rat-catcher and his dog are time-honoured means of aggression, and another instance of the militant method has been successfully adopted in Jamaica where mongooses have been imported and have completely cleared the sugar plantations of rats by destroying their young, thereby saving a large proportion of the sugar crop. The experiments of the Plague Commission and the experience of Dr. THOMPSON, which he has laid before the Epidemiological Section of the Royal Society of Medicine,[1] tend to show that the most necessary means of meeting the rats in fighting plague is prophylactic and consists in rendering dwellings, and especially food-stores, rat-proof. Captain V. B. NESFIELD, I.M.S., has recently suppiemented this suggestion by another, that the winter store of grain should be kept in detached granaries and not in native dwelling-houses. The crusade against rats, however, will not rest content with entrenching itself against the enemy's hordes, and it seems likely that science has provided us with a most potent weapon of offence in the form of a bacteriological virus intensely fatal to rats which readily feed on bait which has been charged with their doom. We have before us the prospectuses and testimonials of two preparations which are said to be poisonous to rats, setting up a quickly fatal disease, but to be harmless to man and the domestic animals. There is certainly a good deal of evidence adduced in their favour but an extended series of observations will be necessary before the efficacy of such measures can be proved.

Pelvic Contraction.

IT is a matter for congratulation that amongst the women of this country cases of contraction of the pelvic measurements are not met with very frequently. Unfortunately, no recent investigations upon this point have been carried out by English observers in a sufficiently large number of cases to enable us to predict with certainty what percentage of such pelves will be met with in every 100 cases of labour. The marked discrepancies existing in the figures which have been collected by foreign observers are to be explained very largely by the fact that the definition of what constitutes a contracted pelvis is not a matter of entire agreement amongst obstetric writers. The one most commonly accepted is that which defines a pelvis as contracted when the degree of contraction is sufficient to interfere with the normal mechanism of labour although it may not retard the birth of

[1] THE LANCET, Dec. 7th, 1907, p. 1611.

the child. Even in different localities in the same country very striking differences in the frequency of the occurrence of such a pelvis may be met with. The statistics of the Rotunda Hospital in Dublin show that on an average 1 per cent. of the women confined at that institution have a contracted pelvis, while in Glasgow it has been computed that one in every ten women suffers from a defect of this kind. Foreign observations show a very wide difference, varying from a frequency of 6 per cent. in Greifswald to one of 22 per cent. in Königsberg. In America WHITRIDGE WILLIAMS computes that every tenth to fourteenth white and third to fifth black woman has an abnormal pelvis. The statistics we have quoted, insufficient though they be, show that this complication of labour is not a very common one in this country, yet it occurs often enough to be met with by every practitioner. It is, however, not the well-marked cases which are difficult to recognise and to treat; it is rather the lesser degrees of contraction, first suspected perhaps towards the end of a prolonged or obstructed labour, which so often lead to disaster. "To be forewarned is to be forearmed" is a maxim which holds with special force in this cause of delayed labour, for such a condition as a general rule can be easily recognised if looked for, and when found is not difficult to treat properly. It is, however, when it is not recognised, and attempts often wrong in principle have been made unsuccessfully to deliver the patient, that so much danger may ensue not only to the life of the mother but also to that of the child. The recognition of a bony deformity of the pelvis sufficient to alter the mechanism of labour or even to cause obstruction during delivery is not a matter of great difficulty to the properly trained practitioner, nor does it entail any unnecessary risk to the patient. A preliminary examination of the abdomen and the careful measurement of the external pelvic diameters, readily carried out without any pain or risk to the woman are usually sufficient to enable a fairly certain diagnosis to be made as to the presence or absence of any marked contraction of the bones of the pelvis. Not only can this be done, when the abdomen is examined, as it always should be about the end of the seventh month of pregnancy, but at the same time the practitioner can determine whether the fœtal head is engaged in the pelvic brim or not, a very valuable guide to the relative proportions of the pelvis and the head. There are, it is true, a few very uncommon causes of pelvic obstruction which cannot be recognised without an internal examination, such as tumours of the pelvic bones or, more important still in view of the great danger which they may cause to both mother and child, ovarian cysts or fibroid tumours in the pelvic cavity.

In a primiparous patient the measurements of the external diameters and the relation of the presenting part, especially when the head is over the pelvic brim, are of the utmost value and importance; this is also the case in a multipara, but here there is another important factor to be considered—namely, the obstetric history. It is, however, necessary to remember that this is not always a safe guide, since the degree of difficulty encountered in successive labours in the same patient may be of a very varied character, and especially is this the case in the lesser degrees of pelvic contraction, since it is more particularly in this type of case that a very slight alteration in the position or the shape of the presenting part of the fœtus may make all the difference between a comparatively simple and a difficult delivery. A considerable interest attaches to a review of the various methods which may be adopted in treating these cases not only because of their importance and the often difficult problems which have to be solved but also because such a survey reveals curious and unexpected differences in different countries in the treatment of what would appear to be identical conditions. A good example of this is to be seen in the favour which is extended to the operation of symphysiotomy in France and to a lesser degree in Germany and the disfavour with which this operation is regarded by most English obstetricians. The recent revival of the operation of pubiotomy has led to the publication of a large amount of literature on this branch of obstetric treatment, and it will be very interesting to see whether this operation makes better headway in this country than has the companion operation of symphysiotomy. English teachers of midwifery are accustomed to regard the treatment of cases of pelvic contraction by the induction of premature labour as a very good one, and yet in France this means of overcoming the difficulty meets with but little favour and it is not practised to the same extent in Germany that it is in this country. It is strange that on a matter upon which it might be surmised that there would not be any great difference of opinion the practice in these countries should vary to so large an extent. It is unlikely that obstetricians of different nationalities will ever look at such matters from precisely the same standpoint when even two practitioners of the same nationality may find it difficult to agree upon the same line of treatment. The operation of the induction of premature labour presents, it seems to us, many advantages; it is easy to carry out, entails but little risk to the mother, and if postponed to as late a date as possible in the pregnancy compatible with the delivery of a living child is attended with good results as regards the saving of the life of the child. It has been said that premature children do not grow up and if they do are not healthy, but we know of no well-founded grounds for any such statements. Obviously the mortality of premature children must not be compared with that of full-term children born of healthy mothers, but with that of children born of the same mother after the adoption of the various operative procedures which enter into competition with the induction of premature labour.

The final decision as to the best course to pursue in cases of this kind calls for an exact knowledge so far as it can be obtained of all the factors which have to be taken into account and each case must be judged separately. It is not our purpose to discuss the merits and demerits of the different procedures which may be necessary to effect delivery but rather to call attention to the great necessity for the recognition of this complication of labour and for carrying out an examination of the abdomen in all pregnant women at any rate once during the last two months of the pregnancy. The number of cases of pelvic contraction which are only recognised at the time when the difficulty occurs during the course of the labour must still be very numerous; indeed, we know it to be so, and the consequent

risk to the life of the mothers and of the children is considerable. We may hope that the new conditions which in the future will attend the clinical teaching of midwifery may render the training which the student receives in the practice of this important subject more nearly on an equality with that which he has received for many years in the subjects of medicine and surgery. Such teaching must include the care of the pregnant woman during her pregnancy and the necessity for a careful investigation of all the conditions which may influence her labour and the safety of herself and her child. No case of pelvic contraction or pelvic obstruction theoretically should be allowed to come into labour with the condition unrecognised and no patient should be allowed to pass through her pregnancy without having been examined, at any rate, by the abdomen and an attempt made to forecast the course of her delivery and to foresee any difficulties which are likely to arise. Such perfection in the practice of midwifery is, we well recognise, almost impossible of attainment, but if we do not aim at a high standard we shall not even attain to a low one. We hope that at any rate one of the chief features in the clinical teaching of midwifery, soon, we trust, to be made compulsory for all students, will be the great importance of the examination of such patients not only when their labour has come on but also some weeks beforehand, so that preventive medicine may be allowed to play a part and the delivery when it does take place may be conducted with the minimum of danger to the mother and the child. At the present time this is not done even in most of the extern lying-in charities attached to our medical schools but we look forward hopefully to the time when it will be considered just as neglectful to allow an expectant mother to run the risks of a labour with a contracted pelvis which has not been recognised because not looked for, as it would be to allow her to run the risk of acquiring some acute infectious disease from the contagion of which no attempt has been made to guard her.

Annotations.

"Ne quid nimis."

THE SALARY OF COUNTY MEDICAL OFFICERS OF HEALTH.

THE Norfolk county council, having decided recently to appoint a county medical officer of health, indulged in a lively debate as to what was a fair remuneration to pay that official. The committee which was appointed by the council to consider and to report on the matter made the recommendation that the salary should be £450 a year, rising by annual increments of £25 to a maximum of £600. Mr. S. Oldman told the council that this decision of the committee was practically unanimous, but the Earl of Kimberley said that his statement was absolutely incorrect and that he himself had fought desperately against it. Mr. Eustace Gurney moved that the salary should commence at £700, rising by annual increments of £25 to a maximum of £850. He pointed out that the new officer would be responsible for the sanitation of 300,000 people and have the supervision of the medical inspection of 55,000 school children. The county wanted a thoroughly experienced and practical man, and such a man would not be attracted by the terms which the council was asked to offer. The motion was strongly opposed by several members from the point of view of safeguarding the ratepayers' interests, although it was pointed out that their best interests would not be safeguarded unless a first-class man were secured for the post. The most interesting contribution that was made to this little squabble was a saying of Mr. Barrett-Lennard who is reported to have remarked that "he had come prepared to move that they paid a lower salary than was recommended. If they wanted a really good man they would have to offer a salary of from £2500 to £5000 a year. He thought a suitable medical officer could be obtained for £350 or £400 a year." Either Mr. Barrett-Lennard has a poor opinion of the chance of finding his ideal sanitarian or else he is more liberal in his views than in his practice in the matter of paying one when he has found him; in either case his argument seems a delightfully innocent *non sequitur*. After a considerable discussion, in which the party in favour of paying liberally fought a losing battle vigorously, it managed to get the committee's recommendation raised by £50. Several speakers alluded to the salaries paid to those officials by the few counties which employ a medical officer of health and it is interesting to compare some of them. Essex pays £1000 and special fees to an officer with charge of a county which includes the teeming district of West Ham and is responsible altogether for 816,500 people. Surrey, with 519,520, pays £800, as do Lancashire with 1,123,850 and the West Riding of Yorkshire with 1,460,860 people respectively, whilst Derbyshire, with 646,000, pays its medical officer £700. Only two county councils pay their medical officers a smaller sum than this last. If we are to compute the salary on a basis of population alone the offer of the Norfolk council seems fairly proportionate; but it must be considered that a county medical officer is a highly trained specialist in his own profession, and in addition has important and responsible administrative functions which recent legislation has made much more arduous, and, moreover, that his emoluments from the post are his only source of earned income. We are therefore in entire accordance with those gentlemen who tried to obtain a liberal remuneration for the new medical officer of a large county. They only lost their motion by 33 votes to 25.

AMALGAMATION OF THE HAMPSTEAD GENERAL HOSPITAL AND THE NORTH-WEST LONDON HOSPITAL.

As is well known to all our readers it has been suggested by King Edward's Hospital Fund that a staff of consulting physicians and surgeons should be appointed for the Hampstead Hospital. This course has been adopted after considerable negotiation, an account of which will be found in our columns, and although there are many circumstances in the situation which impel us to take a contrary view from that of King Edward's Fund we see no way out except that which is being taken by the governing body of the Hampstead Hospital. A further suggestion from the King's Fund of amalgamation between the Hampstead General Hospital and the North-West London Hospital, accompanied by an offer of substantial financial support for the amalgamated institution, has ultimately resulted in the amalgamation being agreed to. As a consequence of these changes vacancies have been declared for two physicians and two surgeons to have charge of the beds in the new building of the Hampstead Hospital. Mr. Edmund Owen, who is already consulting surgeon to the Hampstead Hospital, has consented, in response to a request made to him by the council of the amalgamated hospital, to accept the post of surgeon on the acting staff during the transitional period caused by the change in constitution of the medical staff, and there thus remain three posts to be filled up on the acting staff—two of physician and one of surgeon. The contributory

beds, where the treatment can be supervised by any practitioner, will remain in active working, but in other respects the hospital will lose its original cottage hospital character and be managed upon the usual hospital lines. A forcible letter from Dr. Lewis G. Glover, which we printed in our issue of Jan. 18th, p. 186, well expresses what we must all feel at an evolution which appears to divide the medical profession straitly into classes and to minimise the excellent work done by the late staff of local general practitioners. But the unanimity of opinion of the Hampstead medical men was arrived at too late to have its proper effect upon the public and upon the executive of the King's Hospital Fund —a matter which is of considerable regret to ourselves.

LORD LISTER AND THE MARY KINGSLEY MEDAL.

AT a special meeting of the Liverpool School of Tropical Medicine held recently it was resolved to present Lord Lister with the Mary Kingsley Medal which was struck by the school for presentation to distinguished savants and others who have aided the cause of combating disease in the tropics. Special interest attaches to the presentation of this medal to Lord Lister from the fact that his lordship formally opened the Liverpool School of Tropical Medicine on April 21st, 1899. At that time the expenditure of the school was £350 per annum; in the nine years that have elapsed the school has spent on its expeditions and research work alone over £60,000. The medal was forwarded to Lord Lister with the following letter:—

The Rt. Hon. Lord Lister, O.M. 7th February, 1908.

MY LORD,—We have the honour to forward, under separate cover, the Mary Kingsley Memorial Medal on behalf of the Liverpool Incorporated School of Tropical Medicine.

The School much regrets that it has not been possible to arrange for a deputation to wait upon your lordship to present the medal in person.

No words of ours are required to amplify the esteem in which your magnificent achievements are held throughout the world. The Mary Kingsley Memorial Medal has been founded for the purpose of recognising the work of those who have accomplished much in the cause of tropical medicine. No one has accomplished more for this cause, or indeed for the whole cause of medicine, than yourself. The School feels honoured that your lordship has consented to receive the medal. We remain,

(Sgd.) HELENA, Hon. President.
ALFRED L. JONES, Chairman.
RUBERT BOYCE, Dean.
ALAN MILNE, Secretary.

The following is Lord Lister's reply:—

DEAR MR. MILNE,—I have duly received the Mary Kingsley Medal, with a letter signed by the Hon. President, Chairman, and Dean, and by yourself as Secretary of the Liverpool School of Tropical Medicine.

I beg to return my profound thanks for this highly prized gift and for the exceedingly generous terms in which it is conveyed.

Believe me, very sincerely yours,
(Sgd.) LISTER.

THE FEEBLE-MINDED CRIMINAL.

A PAMPHLET has recently been published by the city of Birmingham education authority containing a number of papers read at a Conference of After-Care Committees which was held in that city last November. One of these papers, dealing with the problem of the feeble-minded criminal, was contributed by Dr. H. B. Donkin who, as one of H M. Commissioners of Prisons, is able to speak on this question with the combined authority of the physician and the practical administrator. Starting from the fact, painfully familiar to all who have had to do with the work of the special schools for mentally defective children, that the large majority of such children cannot by any system of training be made capable of eventually supporting themselves, Dr. Donkin points out, as a very obvious inference, that a good many of them are likely, following the path of least resistance, to drift into the criminal class. And he states that, as a matter of fact, amongst the prisoners technically known as "convicts"—i.e., those sentenced to penal servitude as distinguished from mere imprisonment, and therefore guilty as a rule of relatively grave offences—a very large proportion are found to be congenitally feeble-minded. To illustrate the hopeless recidivism which characterises individuals of this type when they have once embarked on a criminal career he cites the case of a prisoner who was first convicted when seven years old and who had no less than 28 convictions recorded against him before he had reached the age of 24 years. Amongst the minor offenders who are committed to local prisons the proportion of persons of weak mind cannot be stated positively but Dr. Donkin would put it at from 10 to 15 per cent. at the lowest estimate. The committal of these feeble-minded persons to prison is indefensible but it is also at present inevitable; there is no place other than the prison for the weak-minded law-breaker who cannot be certified "insane." The result is that "feeble-minded prisoners, male or female, oscillate vaguely between the streets, the poorhouse, the asylum, the gaol, and the maternity wards; and the less patently idiotic they are the greater the evils they cause and suffer." In pleading for some more rational way of treating these unfortunate beings in their own interest and in that of society, Dr. Donkin takes occasion to apply a much needed corrective to the pseudo-scientific rubbish about the "born criminal" and the "inheritance of crime" which has done so much to discredit the genuinely scientific study of this social problem. The relation of heredity to crime is, he points out, simply through mental defect. In the case of a weak-minded criminal what may be inherited is not criminality but the incapacity to acquire the elements of good or social conduct; and it is this incapacity to develop the higher and more complex associations, and not any specifically vicious tendency, that makes the imbecile succumb to the temptations of an evil environment. Given better surroundings, a considerable proportion of these defectives would not become criminals at all. It is probable indeed that very many, especially of the higher grade imbeciles, might almost as easily be trained in a harmless as in a harmful direction, though all require continuous regulation and control from outside.

HYGIENIC IMPROVEMENTS IN THE PROCESS OF CHINA SCOURING IN THE POTTERIES.

WE have received an interesting paper from Dr. Frank Shufflebotham of Newcastle-under-Lyme in which he discusses the improvements which from time to time have been introduced in the process known as china scouring and which have been directed towards minimising the dangers to the health of the operatives arising from the inhalation of dust. Hitherto the process has been regarded as one of the most unhealthy branches of the pottery industry but at the present time the conditions under which china scouring is carried out make it, as Dr. Shufflebotham says, a comparatively harmless operation. Scouring consists in removing the roughness from articles of ware occasioned by the adherence of particles of flint used in the saggars in the firing oven. It was originally carried out in primitive fashion by girls who rubbed off the particles of flint with a hard brush or if that was not sufficient the surface was sand-papered. This operation produced clouds of dust which was inhaled by the workgirls, the sharp angular particles causing irritation of the mucous membrane of the smaller bronchial tubes and the pulmonary alveoli, and in quite a short time fibrosis of the lungs might be produced. About 20 years ago a fan was introduced which greatly improved the ventilation of the workshops and at about the same time manufacturers began to scour the ware with brushes. Sand-papering, however, could not be dispensed with as a finishing process. In 1894 the use of a fan was made compulsory by the Home Office and certain regulations were applied in regard to the operatives wearing overalls, head coverings, and

so on, and to the provision of lavatory accommodation, the systematic cleaning of the workshops, and so forth. These special rules were extended in 1898 so as to include a compulsory medical examination once in each month by the certifying factory surgeon and the use of exhaust fans for the removal of dust was enforced. During the last ten years these rules have been in operation and with a most satisfactory result. The medical evidence brought before the Departmental Committee on Compensation for Industrial Diseases showed that fibrosis of the lungs among potters, including china scourers, is now a comparatively uncommon disease and is found only in isolated instances. It was admitted that china scouring was the occupation in which the operative might incur most risk of contracting this disease, but it speaks highly for the present conditions of employment when such a marked diminution in the number of cases of fibrotic lung is so evident. It has been a matter of considerable difficulty for some years past to obtain a typical pathological specimen of fibrosis of the lungs from a potter. The process of china scouring recently has undergone almost a revolutionary change by the introduction of a machine which will entirely dispense with hand labour. The machine consists of a steel cylinder, the interior of which is divided into recesses into which fit skeleton cages containing the ware which has to be scoured. The cages are similar in transverse section to the recesses in the front frame of the cylinder, but they vary in the interior to suit the size and shape of the pieces of ware to be carried in them. Previously to filling the machine with ware a weighed quantity of broken pitchers, ground and screened to a standard size, is placed in the cylinder. When the cylinder is filled it is caused to rotate about 15 revolutions per minute, and in this way the broken pitchers will be carried in a shower between the articles in the various cages and thus the ware will be thoroughly scoured. The fine dust produced in carrying out this procedure is drawn from the interior of the cylinder by an air-current through it which is induced by a centrifugal fan. This method has now been adopted by many of the largest china manufacturers in the country. The advantages of the machine, Dr. Shufflebotham concludes, are: (1) that it scours the ware more effectively than by the revolving brush and gives a smoother surface, and makes it easier to detect bad pieces of ware; (2) that it dispenses with the sand-papering process; (3) that it reduces the number of operatives engaged in this process (who have hitherto scoured with the revolving brush and sand-paper) by one-fourth; (4) that it is a more economical process; and (5) that the worker is not exposed in any way to dust. It may be regarded as an entirely harmless process. It can be applied to all kinds of ware except those of irregular shapes, which would be liable to break in the machine. These articles are best scoured by the sandblast.

THE EXCLUSION OF FAT FROM THE DIET.

PHYSIOLOGICAL considerations would imply that many minor ills of the body would be avoided if only care were taken to include a sufficiency of fat in the diet. Fat, we know, is about the most compact form of fuel which we possess while it exercises a favourable effect upon the processes of the intestinal tract. In excessively cold countries a rich fatty diet is indispensable, for fat is the only food substance which will rapidly replace the heat lost by the body, and travellers in the Arctic regions have related that they could only be kept warm and comfortable by a generous supply of fatty food, in comparison with which the effect of extra clothing was inappreciable. The tendency of to-day in many quarters is to exclude as much as possible the fatty portions of animal foods. Pieces of fat are carefully cut off the slice of ham, mutton, or beef, and only the lean parts are eaten. Indeed, for some unaccountable reason the eating of fat is regarded by not a few as positively vulgar. Such an attitude, of course, displays an ignorance of physiological facts. Cold feet, hands, fingers, ears, and chilblains would in many instances be avoided under a generous diet of fatty food. A digestible fat favours nutrition considerably; it spares much waste of the tissue-forming elements of food. When lean meat alone is given large quantities are required in order that nutrition and waste may balance one another, but if fat be added the demand for flesh is less. Besides, therefore, giving an advantage in regard to making good the repair of the body, the use of fat is economical from the point of view of pounds, shillings, and pence. The absorption of large quantities of fatless meat again tends to overload the blood with nitrogenous waste products. In anæmic persons the partaking of an easily digested fat is commonly followed by the best results, nutrition is greatly improved, and the condition of the blood is often restored to normal. It is well known, again, that easily absorbable fats, such as butter, cream, cod-liver oil, bacon fat, and dripping, are especially valuable to sufferers from wasting diseases. The introduction of the old-fashioned and well-prepared suet pudding into the diet is in perfect accordance with scientific teaching, and from the dietetic point of view, especially in the feeding of young growing people, does probably a really beneficial service to the country. The assumed aversion to fat on the part of a great many people is silly and mischievous, for there can be little doubt that a reasonable proportion of fat in the diet is calculated to preserve the standard of health. Cases of true repugnance or intolerance do of course exist but on the whole they are rare.

THE INACCURATE DOSAGE OF MEDICINES.

THE *National Druggist* (an American journal) for December calls attention to the variation in capacity of ordinary medicine bottles, as shown by a careful examination of one dozen each of two, four, six, and eight-ounce oval bottles of best quality that were purchased on the American market. Each of these 48 bottles, when suitably filled, was found to hold more or less than the correct volume of liquid, the greatest error amounting to 18·3 per cent. of the correct volume. The two-ounce bottles held from 95 to 176 minims more than the reputed volume; in the case of the four-ounce bottles the excess varied from 77 to 190 minims; the six-ounce bottles held from 188 to 366 minims too much liquid; while the eight-ounce size showed a nearer approach to accuracy, ranging from a deficiency of 144 minims to an excess of 134 minims. It is noteworthy that the greatest variations were found in the smaller bottles, in which an error is of more consequence than in the larger sizes. In view of these facts it is evident that the pharmacist should select his prescription bottles with the greatest possible care or else abandon the prevalent custom of regarding the bottle as holding the proper quantity of liquid and filling directly into the bottle. The past three decades have witnessed great advances in the method of preparing and especially of standardising medicines, but this advantage is liable to be rendered nugatory by the failure to divide the ingredients of a prescription into the indicated number of doses. And this is only one of the sources of error incidental to the question of the dosage of medicines. It has often been pointed out in THE LANCET that the capacity of domestic spoons varies within very wide limits. Graduated medicine glasses are relatively seldom employed, with the result that the patient usually takes considerably more or less of the medicine than was intended by the physician. But the public will continue to use the domestic spoon so long as medicines are ordered to be taken

by spoonfuls. The difficulty could be met by the adoption of the following simple plan. In writing prescriptions let the doses be given in drachms, half ounces, and ounces. The patient, being ignorant of the equivalent in spoonfuls, would then be obliged to procure a proper measure. At present the situation is "Gilbertian." A correct diagnosis and a nicely balanced prescription, dispensed from the purest drugs standardised to a high degree of accuracy, are muddled, or possibly rendered useless or dangerous, by the use of inaccurate medicine bottles and still more inaccurate domestic spoons.

THE STATUE OF SIR THOMAS BROWNE AT NORWICH.

IN the year 1903 the corporation of the city of Norwich informed the committee of the Sir Thomas Browne Memorial that the corporation would provide a site for the statue of Sir Thomas Browne in the garden which has just been laid out in the Haymarket. The statue was accordingly provided by the subscribers at a cost of upwards of £1000 and was unveiled on Oct. 19th, 1905, by Lord Avebury. Recently the corporation of Norwich proposed to place lavatories and urinals behind, and in close proximity to, the statue and it is felt by many in Norwich that the collocation of the statue and the urinals is, to say the least of it, unsatisfactory. A memorial has therefore been drawn up, which has been largely signed by medical men and others both in Norwich and in London, praying the corporation not to proceed with the scheme for erecting the lavatories and urinals on the site allotted to the statue. We earnestly hope that the corporation will accede to the prayer of the memorialists and will find some other and more appropriate site for the proposed lavatories.

LUMBAR PUNCTURE IN THE MENINGEAL FORMS OF ENTERIC FEVER IN CHILDREN.

IN the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of Jan. 26th Dr. Ch. Rocaz and Dr. Firmin Carles have published an important paper on the therapeutic value of lumbar puncture in the meningeal forms of enteric fever in children. In children enteric fever is often complicated by meningeal symptoms. In some cases these are slight and fugitive and of only secondary importance; in others they are more marked and persistent and occupy the first place among the clinical manifestations. For a long time writers discussed these meningeal symptoms and insisted on the variability of the prognosis according as there existed true meningitis or meningeal symptoms without an anatomical substratum (meningism). The introduction of lumbar puncture has given a new interest to the question. From the clinical standpoint four types of meningeal manifestations in enteric fever in children may be distinguished. In the first, towards the end of the second week appear intense headache, repeated vomiting, and constipation (which may replace the pre-existing diarrhœa). Cutaneous hyperæsthesia, irregularity of pulse and respiration, various vaso-motor troubles, and retraction of the head follow. Ocular symptoms (inequality of pupils, strabismus, and ptosis) are rarer and of more serious prognosis. After some days these symptoms may disappear but sometimes they terminate in death. In the second type the complete "*tableau*" of acute cerebro-spinal meningitis is presented. In addition to the symptoms described Kernig's sign appears and rigidity of the neck and spine, as marked as in acute cerebro-spinal meningitis, follows. The rigidity may extend to the limbs and the hands and feet may assume the attitude of tetanus. This is one of the most frequent types. The third type is rarer. The attack presents from the first the complete "*tableau*" of tuberculous meningitis and erroneous diagnosis is easy. The fourth type is peculiar to infants. During an attack of enteric fever convulsions appear and lead to a rapidly fatal termination. Lumbar puncture has thrown a new light on the pathogenesis of these phenomena. It may yield (1) pus in which may be found the typhoid bacillus in pure culture, other microbes, such as staphylococci, or a mixture of the typhoid bacillus and other microbes; (2) a turbid or transparent liquid in which centrifugalisation shows microbes—the typhoid bacillus or others; (3) a liquid which, though quite clear, contains abnormal cellular elements, usually abundant lymphocytes; and (4) a liquid of normal composition but flowing out in a jet, indicating abnormally high tension. In the first two cases the pathogenesis of the meningeal symptoms is manifest; the meninges are infected. In the third case it is logical to suppose that the meninges are irritated by microbial toxins which give to the cerebro-spinal fluid its cytological characters. In the fourth case also the hypersecretion of cerebro-spinal fluid is probably due to the same cause. M. Roger has shown the frequency of serous exudations under the action of various toxins. These facts also explain why lumbar puncture can be useful in the meningeal forms of enteric fever. Concetti, Netter, and many others have shown that repeated lumbar puncture is the best treatment of bacterial meningitis. The operation is therefore indicated in cases of enteric fever in which the cerebro-spinal fluid contains microbes. Each puncture removes some of the microbes and they are reproduced with difficulty as the cerebro-spinal fluid is a bad culture medium. They therefore soon disappear. If, on the other hand, the meningitis is simply toxic, the removal of a certain quantity of fluid charged with toxins cannot fail to have a favourable action. In the case of abnormally high tension puncture diminishes the pressure on the nervous centres and removes the resulting symptoms. The following is one of eight cases showing the value of lumbar puncture related by Dr. Rocaz and Dr. Carles. A boy, aged eight years, had a severe attack of enteric fever characterised by profuse diarrhœa, a temperature of 103·6° F., rose spots, and so on. On the eighteenth day he complained much of headache, cerebral vomiting occurred, and the diarrhœa was replaced by constipation. The head was retracted, the neck was rigid, and Kernig's sign was present. Lumbar puncture yielded 12 cubic centimetres of clear fluid under high pressure. Cytological examination showed that this was of normal composition. All the symptoms of meningitis had disappeared on the following day and uninterrupted recovery followed.

AN EXTRAORDINARY PROPOSAL.

WE have received a copy of an extraordinary work entitled, "Truth: Experimental Researches about the Descent of Man." The author of this remarkable book is M. H. M. Bernelot Moens and we regret to see that he is to be assisted in his enterprise by Dr. H. M. J. Boshouwers, a medical man. The book, or pamphlet, is intended, we suppose, as a preliminary notice, and an appeal for pecuniary assistance in the prosecution of the work which these gentlemen intend to carry out in the Congo. Their aim is to furnish experimental proof of the view that man is a highly developed anthropoid ape, and for this purpose they intend to practise artificial fecundation of the females of the anthropoid ape with the sperm of man; the gorilla and chimpanzee to be fecundated with negro semen. M. Moens also wishes to carry out experiments in the crossing of the anthropoid apes either by artificial or natural fecundation and to study human diseases, more especially syphilis, by means of experiments on these animals. The book is to be printed in Dutch, French, and German, and the

reason adduced by M. Moens for publishing his plans in a form accessible to the public at large is said to be to bring about a closer contact of all such persons who value truth above everything and are willing to support all honest endeavours to find truth. Some Royal personages are stated already to have given financial support to this scheme and M. Moens apparently sees no reason for supposing that he will not receive the money for which he appeals. We need hardly say that we have no sympathy with any such work; the truth with regard to the descent of man is not to be proved by experiments of the kind suggested and the proposal to attempt them calls for the strongest condemnation.

INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS.

THE first international laryngo-rhinological congress (Türck-Czermak Jubilee) will be held in Vienna from April 21st to 25th under the presidency of Hofrat Professor Dr. O. Chiari. April 22nd will be devoted to six discussions, the subjects of which, together with the names of the speakers introducing them, will be as follows: General Treatment of Local Lesions of the Upper Air Passages, Sir Felix Semon (London); Laryngology and Rhinology from the General Medical Point of View: Instruction and Examinations in those Specialties in Various Countries (Dr. B. Fränkel, Berlin, and Dr. Lermoyer, Paris); Treatment of Tuberculosis of the Upper Air Passages (Dr. Gleitsmann, New York, and Dr. Heryng, Warsaw); Diagnostic and Therapeutic Value of the Roentgen Rays and of Radium in Laryngology and Rhinology (Dr. Burger, Amsterdam, and Dr. Gradenigo, Turin); Connexion between Diseases of the Nose and Naso-pharynx and Diseases of the Eye (Dr. Onodi, Budapest, and Dr. Kuhnt, Königsberg); and International Laryngo-Rhinological Congresses (Dr. Jurasz, Heidelberg). The titles of 57 papers to be read on the following days are announced. The secretary of the Congress is Professor Dr. M. Grossmann, IX. Garnisongasse 10, Vienna.

MEDICAL EDUCATION IN PARIS.

A MOVEMENT for the introduction of "free teaching" (*enseignement libre de la médecine*) in the Paris hospitals has been in progress for about a year under the auspices of the Association d'Enseignement des Hôpitaux, and the inaugural meeting of this association was held on Jan. 19th in the amphitheatre of the Sociétés Savantes. Among those present were a number of important official personages and distinguished representatives of medicine and surgery. M. Lucas-Championnière, the president of the association, opened the proceedings with an address in which he commented on the insufficient utilisation of the teaching resources of the Paris hospitals, whereas in Germany, England, and America strenuous efforts were being made for the improvement of clinical instruction. He then said that the new association did not propose to set up a system of medical education in competition with that of the Paris Faculty of Medicine; its object was merely to extend and to develop the system of hospital teaching which had been in existence for a long time. The objects and methods of the association were fully described in a publication (*livret périodique*) which would be distributed on a considerable scale. The free teaching of the association and the official teaching of the Faculty of Medicine would supplement one another and would form a harmonious system. In conclusion, M. Lucas-Championnière commended M. Roux, M. Bucquoy, and M. Lannelongue, who had given what might be called extra-mural courses of instruction (*cours en dehors de la Faculté*). M. Paul Strauss, a member of the French Senate, said that in 1890, when he was President of the municipal commission of the Assistance Publique, he had endeavoured to bring together in a *libre école* under the patronage of the City of Paris certain hospital physicians and surgeons who were willing to give clinical instruction in their wards. Owing to the hostility of a section of the Faculty of Medicine the project as outlined at that time came to nothing but he anticipated that the present revival of it would be more successful. M. Ambroise Rendu, speaking on behalf of the municipal councillors of Paris, said that they would rejoice to see the medical staff of their hospitals teaching students similarly to the professors of the University. M. Mesureur, director of the Assistance Publique, said that he held views similar to those of the two previous speakers. He did not sympathise with the objections which had been raised against clinical teaching in hospitals and he believed that the patients received better attention when the physician or surgeon had an audience of students.

GREGOR JOHANN MENDEL.

IN a recent issue of the *Pharmaceutical Journal* some interesting particulars are given of Mendel, the discoverer of the law which bears his name. Gregor Johann Mendel was born in 1822 at Heinzendorf bei Odrau in Austrian Silesia. In 1843 he entered as a novice the "Königinkloster," an Augustinian foundation at Altbrünn, and three years later he was ordained priest. From 1851 to 1853 he studied physics and natural science at Vienna, and then, returning to the cloister, he became a teacher in the Realschule at Brünn. In the garden of the cloister he carried out his classic experiments on the edible pea, *Pisum sativum*, and gave the results in the form of a paper which was read to the Brünn Society in 1865 under the title of "Experiments in Plant Hybridisation." An English translation of this paper was subsequently made by the Royal Horticultural Society. In 1869 he published the only other paper which he wrote on natural history, entitled "On Hieracium Hybrids obtained by Artificial Fertilisation." His work appeared at an unfavourable time and both Mendel and the principles of heredity which he enunciated remained unnoticed for 35 years. Mendel was also interested in meteorology and in sun spots. He ultimately became Abbot of Brünn and was greatly liked and respected. He died from Bright's disease in 1884, at the age of 61 years. Further details of the life and work of this interesting priest and man of science are given in "Mendel's Principles of Heredity: A Defence," by W. Bateson (1902), a work which now is probably out of print, and "Mendelism," by R. C. Punnett (1907), published by Macmillan.

LIPOMA OF THE UTERUS.

LIPOMA of the uterus is so rare as to be a pathological curiosity but undoubted instances are on record. Dr. A. G. Ellis, in an interesting paper published in the *Proceedings of the Pathological Society of Philadelphia*, No. 8, 1906, records an example in a woman, aged 60 years, who died in the Philadelphia Hospital from cerebral hæmorrhage, with fatty heart, arterio-sclerosis, chronic endocarditis, and contracted kidneys. The uterus showed a globular swelling occupying the fundus and anterior portion of the body. This tumour was softer than the usual uterine fibroid and was regarded before section as a soft myoma with degenerative changes in its interior. On section, however, it proved to be a mass of yellow fat with a lamellar arrangement like that commonly seen in lipomata. The mass was eight centimetres in its vertical diameter and 6·5 centimetres broad; it was placed interstitially and possessed a thin greyish capsule. On microscopical examination the appearances were characteristic of a lipoma; the fat cells were round or polygonal in outline and were larger than those of normal fat. The blood-vessels were not numerous and the fibrous tissue was only scanty. There was a capsule of fibrous or fibro-fatty character. No muscular tissue was found in the tumour

which appeared to be a pure lipoma. Tumours of the uterus are extremely common. Gurlt in an analysis of 13,971 tumours observed at the hospitals of Vienna found that 4115, or 29 per cent., originated in the uterus. Williams found an almost identical percentage—viz., 28·7 in 13,824 cases of tumours treated in four large London hospitals, but no example of lipoma is included. Seydel in 1903 found a lipofibromyoma of the size of a walnut in the uterus of a woman, aged 58 years, and after an exhaustive study of the literature could only find ten other cases of fatty tumour of the uterus. There were thus on record at this time four cases of lipoma, two of lipomyoma, and four of lipofibromyoma, the remaining case being described simply as composed of adipose tissue. In addition, there are three other cases in the literature of this subject which were macroscopically of fatty appearance but were not examined microscopically and were on this account excluded by Seydel. Dr. Ellis has studied the published accounts of these various cases and gives brief accounts of them. Apart from his own case he has been able to find no further instances. The ages of the patients in the 12 cases varied from 28 to 68 years. Several of the women were sterile, while one had 13 normal labours and three miscarriages. The histogenesis of these tumours is a point of some interest, since the normal uterus does not contain adipose tissue. It has been suggested that they arise by the muscle cells changing into fat cells but there is no evidence in support of such a metaplasia. The usual view is that they originate in rudiments of embryonic fat included in the uterus and their occurrence is taken as supporting Cohnheim's view of the genesis of tumours.

VENEREAL DISEASE IN RANGOON.

THE reports that have recently reached us concerning the prevalence of venereal disease in Rangoon are distressing. In the words of one of the officials of the municipal committee, "since the suspension of the C.D. Acts in India and Burma by orders from home we have now come to a pass which is truly intolerable." The statistics that have been collected substantiate this assertion. Major C. E. Williams, I.M.S., the able health officer of the Rangoon municipality, instituted an inquiry at the instance of the committee to ascertain the extent to which venereal diseases were prevalent in Rangoon, the scope of which inquiry was limited to three points—namely, (*a*) the extent to which venereal diseases are prevalent in Rangoon at the present time, (*b*) a comparison of the figures for admission for these diseases at certain military and civil hospitals during the past ten years, and (*c*) a comparison of the data obtained under the last point with those on record for other cities and cantonments in India and Burma. The sources of information on these points were the experience of medical men practising in Rangoon, the medical records of the Rangoon garrison as shown in the annual sanitary reports published by the Government of India, and the tables appended to the annual sanitary reports of the Sanitary Commissioner with the Government of India and Inspector-General of Civil Hospitals, Burma, for the years 1896–1905. As a result of this inquiry it was ascertained that in the opinion of the majority of the medical practitioners in Rangoon, including all those who can claim to have an intimate and extended acquaintance with the people of this town, venereal diseases were more prevalent at the present time than formerly, that they are found in all classes of the population, and that they assume a very virulent type. Further, that youths of all classes are especially prone to contract the diseases, and that innocent women and children suffer from the results of direct and inherited infection, whilst the infant mortality is increased from this cause. The statistics of the military and civil hospitals in Burma, the health officer concludes, are open to criticism and do not throw much light on the problem; they indicate these diseases to be more prevalent in Rangoon than in Calcutta and other Presidency towns, but that their prevalence on the whole tends to decrease. But the health officer considers the testimony of the medical men of the town to be the more valuable in forming a correct estimate of the prevalence of venereal diseases, the military returns referring to only a small section of the population living under special conditions, whilst those of the civil hospitals rest upon varying and uncertain elements of the population. 19 years ago all restrictions upon prostitution and the propagation of venereal diseases were withdrawn, this being due to the interference of the Home Government. Compulsory attendance at the Lock Hospital in Rangoon ceased in August, 1888. Since that time infected women have been allowed to go on with their disease-spreading trade.

ANTI-SWEATING DEMONSTRATION.

ON Tuesday evening, Jan. 28th, a meeting was held in Queen's Hall to demonstrate against the evils of what is known as the sweated industries system. The meeting took place under the auspices of the National Anti-Sweating League, was very largely attended, and was presided over by the Bishop of Birmingham. A proposition to the following effect was introduced by Mr. Arthur Henderson, M.P., the newly made leader of the Labour Party in Parliament:—

> That this representative national demonstration calls the attention of His Majesty's Government to the evils arising from the gross underpayment of workers proved to exist in particular trades, and requests that Wages Boards on the lines of those suggested in the Sweated Industries Bill of Mr. Arthur Henderson be established in such trades.

This motion was seconded and supported by Sir Charles W. Dilke, M.P., Father Bernard Vaughan, Miss Mary R. MacArthur, and Mr. G. Bernard Shaw. All the speakers dwelt upon the insanitary conditions under which the majority of those engaged in sweated industries live, conditions which act especially as regards women home-workers, and have a serious effect upon infant mortality and may also influence race deterioration. The Bishop of Birmingham in his speech alluded to an interesting point, that by the Mosaic law both the material and sanitary welfare of workers was carefully guarded, and that throughout the Bible the necessity of giving a living wage to all who toiled with their hands was emphasised.

THE Central Hospital Council for London has issued the report of its committee appointed last July to advise whether the constituent hospitals of the council, which represents all the larger hospitals, should take joint action to insure the purity of their milk supply. The committee recommends joint action and indicates to the hospitals the requisitions which it considers should be made binding upon those who contract to supply the hospitals with milk. The report will receive detailed notice from us—it is a highly important document.

THE Department of Public Health of Queensland in a bulletin dated Jan. 4th states that for the week ending Jan. 4th a fatal case of bubonic plague occurred at Brisbane on Jan. 3rd. The patient, a man, aged 53 years, living at Boundary-street, Spring Hill, and working on a coal hulk in the river, was admitted to the Brisbane General Hospital on Jan. 1st. The post-mortem examination of the viscera of the body showed that death was due to plague. This is Case 1 of the current year.

THE 135th anniversary dinner of the Medical Society of London will take place at the Whitehall Rooms, Hotel Métropole, on Wednesday, March 11th, at 7.30 P.M. Dr. J. Kingston Fowler, President of the society, will occupy the chair.

ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR THE YEAR 1906.

I.

WE have pleasure in announcing the appearance within the last few days of the Registrar-General's report on the births, deaths, and marriages in England and Wales for the year 1906. Of the annual reports issued from Somerset House since the assumption of office by the present Registrar-General this is the sixth, and from the rapid survey of it which has hitherto been practicable we believe it to be a worthy addition to a series of essays on vital statistics hitherto unrivalled in any language.

In his first report—namely, that for the year 1901—Sir William Dunbar availed himself of the opportunity afforded by the opening of a new century to arrange, and where necessary to modify, the information contained in previous reports so as to comply with modern requirements, whilst still retaining the means of comparison with data contained in the long list of annual volumes issued by his predecessors. For example, the method initiated by Major Graham was resorted to—namely, that of presenting those portions of the report which treat of mortality and its causes in the form of a letter for which his medical adviser is responsible. The reasons for this course are indicated in Sir William Dunbar's first report, wherein, after graceful acknowledgment of the coöperation of medical men as the indispensable factor in the construction of vital statistics, he expresses the hope that our profession will view with approval an arrangement by which the information which they contribute gratuitously will in future be analysed and its significance indicated by the medical member of his staff. It is obvious, however, that reports of this nature possess a vital interest for the general public; and therefore the Registrar-General, in his introductory remarks, properly and very usefully summarises, for the benefit of his non-medical readers, the more technical portion of Dr. Tatham's letter, and this he does with discretion and without unnecessary detail.

In noticing the successive reports of the Registrar-General since his assumption of office we have commented on the steady expansion of their scope from time to time. In the report before us, for example, we observe that under the head of "international statistics" the data formerly published for the principal European countries other than our own have been extended so as to include particulars relating to general mortality, to the loss of life caused by the principal epidemic diseases, and to the fatality of pulmonary tuberculosis and of cancer. Accordingly, comparison is now practicable between the mortality from these diseases in our own country and that of countries beyond the sea. In like manner the mortality of infants in our Australasian colonies and in some foreign lands may by this means be contrasted with that obtaining at home. A new feature in these reports is the appearance in the present issue of a series of well-designed diagrams illustrative of changes in the English rates of marriages, births, and deaths, the facts presented being carried back to the earliest periods for which trustworthy statistics are available. Many persons there are to whom graphic representations of statistics appeal more strongly than would any tabular arrangement of figures, which latter are sometimes passed over as too complicated for interpretation by any but expert readers. To such persons we commend for attentive study the excellent series of diagrams in this report.

As might have been expected, the subject of infantile mortality which has been brought into prominence by the National Conference recently held in London is commented upon somewhat fully in the present report. Referring to the generally accepted statement, which until now has passed unchallenged, that whilst the mortality among adults has fallen steadily in recent years there has been no corresponding fall in infantile mortality, the Registrar-General assures us that this statement holds good only up to the close of the nineteenth century. For since the beginning of the current century there has been a break in the growth of infantile mortality which, with some fluctuations, he acknowledges to have prevailed throughout the previous decennium. Among infants in their first year of life the average mortality has shown a decrease since 1900 amounting to 11 per cent. on the rate of 1891–1900. He points out the important fact that about one-third of the total deaths at this early age are due to ante-natal influences, such as premature birth, atrophy, debility, and congenital malformations, a group of conditions that may be described under the general heading of "immaturity." Over and above these conditions he holds that the employment of women in textile and other industries, ignorance, careless and insufficient nursing on the part of mothers, and overcrowding and insanitary environments are important factors in bringing about a high rate of infantile mortality. Passing reference is made to the Act for the notification of births which was passed in the last session of Parliament and the Registrar-General expresses the opinion that, if consistently carried out, a well-devised system of early notification of births, worked in connexion with the present registration system on the one hand, and with sanitary administration on the other, will serve as a most effective and lasting barrier with which to stem the tide of infant mortality.

A prominent feature noticeable in this connexion is the evidence contained in the report of the pains taken by its author to present the information at his disposal in such a way as to avoid statistical fallacy, and this, in a highly technical matter like the present, is an object by no means easy of attainment. For example, in his remarks respecting the recent improvement in infantile mortality, Sir William Dunbar, after recounting the various conditions probably conducing to this favourable result, cautions his readers thus: "At the same time," he says, "I think it right to refer to the special influence of summer temperature and rainfall upon infantile mortality. For instance, the showery and exceedingly cool weather experienced in the past summer checked the rise in the rate of infant mortality that usually occurs in the third quarter of the year. ..... It should accordingly be borne in mind that, speaking generally, throughout the last six years this country has experienced a cycle of favourable seasons and that for this reason before calculating upon a continuation of the present fall in infantile mortality it will be prudent to await a return of hot and dry summers in order that the extent may be ascertained to which existing sanitary arrangements in some of the manufacturing centres are able to withstand the onset of extreme heat and dryness without involving the inordinate sacrifice of infant life."

In the history of English vital statistics nothing stands out more prominently than does the unequal incidence of mortality among the infant section of the community. In illustration of this fact a chart is presented showing the distribution of infant mortality in the several registration areas. The chart shows that with slight fluctuation these areas show severally either a high or a low mortality through a long series of years. From a table contrasting the present with the past we learn that as compared with 30 years ago all the English counties except Essex and Monmouthshire have shown in recent years a considerable fall in mortality. On the other hand, of the 12 Welsh counties no fewer than nine show an increase of infant mortality during the last 30 years.

It has frequently been remarked in these reports that those areas of the country which comprise the districts of the mining, textile, and pottery industries show very badly in respect of infant mortality; not only are the rates excessive in many of the larger towns of these districts, but they are equally so in the majority of the smaller towns. In proof of this a table is inserted showing that there are several groups of towns in close contiguity in Staffordshire, Cheshire, Lancashire, and Glamorganshire carrying on industries of one or another of the kinds here spoken of, in no fewer than eight of which towns an average of about one in every five children born did not survive the first year of life. The towns alluded to are Bilston, Longton, Tunstall, Stalybridge, Burnley, Farnworth, Ince-in-Makerfield, and Aberdare. Speaking generally, excessive waste of infant life is associated with a high birth-rate and with overcrowding, and it is probable that these conditions prevail more or less in the majority of the towns now specified. It should be observed, however, that there exist several towns which have a comparatively low birth-rate and little overcrowding, but in which, nevertheless, infant mortality is very high. Such towns not only produce feeble children but lose an immoderate proportion of those produced. The towns with low rates of infantile mortality may generally be described as superior residential towns or suburbs, the birth-rates in which

are conspicuously low, and there is no evidence of overcrowding. Among places of this sort there are two which deserve special mention—namely, Swindon and Burton-on-Trent, for the statistics of both these towns clearly prove that industrial urban conditions need not of necessity be inimical to infant life.

In England at the present day there are numerous areas, urban as well as rural, where the rates are low and compare favourably with the lowest rates in the several foreign and colonial states. On the other hand, there remain many industrial centres where excessive rates indicate that the conservation of infant life is much neglected. Sir William Dunbar closes his remarks on this important topic with the following weighty words:—

> It may confidently be affirmed that in future any permanent reduction in the mortality of young children in England and Wales, as a whole, will largely depend upon a due recognition of parental responsibility, on the one hand, and, on the other, an improved health administration in these industrial areas, particularly in that of numerous small towns.

Closely associated with the foregoing subject, this report contains important information respecting the waning fertility of English mothers. The birth-rate in England and Wales attained the highest point on record in the year 1876, and the mean rate of birth in the quinquennium following that year has been taken as a standard for comparison. Based on the proportion of births to the number of possible mothers, married as well as single—i.e., on the total number of women living at child-bearing ages—the fall since that period has amounted to more than 29 per cent., whilst the fertility of married women, based on the ratio of legitimate births to wives of conceptive ages, showed a decrease amounting to 25 per cent. within the same period. In other words, if the fertility of married women in proportion to their numbers had been identical in 1876–80 and in 1906 the legitimate births in 1906 would have exceeded by more than 300,000 the number actually registered in that year.

The Registrar-General has more than once admitted in his reports that the registers of birth as well as of death are capable of improvement, and in the present report he reverts to the subject. He finds, however, on consideration that further evidence is required of the desirability of including some possible improvements before embarking on the reconstructing of the registers for a total of more than 2000 districts. As the existing registers give no information respecting the ages of mothers there are no means of ascertaining the fertility of women at the several ages comprised in the child-bearing period. As a digression for a moment we may recall the fact that the Scottish registers at one time contained this information, which has been ably utilised in connexion with the subject of maternal fertility in that country. In England, nevertheless, there are sufficient grounds for stating that during the past 30 years about 15 per cent. of the decline in the birth-rate (based on the proportion of births to the female population aged 15–45 years) is due to the decrease in the proportion of married women of conceptive ages, and that over 7 per cent. is due to the decrease of illegitimacy. With regard to the remaining 78 per cent. of the decrease Sir William Dunbar pointedly remarks that although some of the reduced fertility may be ascribed to changes in the age constitution of married women there can be little doubt that much of it is due to deliberate restriction of child-bearing.

MEDICINE AND THE LAW.

Medical Certificates for School Children.

Mr. Paul Taylor recently made the following observations at the Marylebone police-court with reference to the class of cases in which parents are summoned for the non-attendance of their children at school through illness as to which no medical certificate is forthcoming. The learned magistrate said: "I look upon it as very important that the poor should be able to obtain such certificates without payment, and it would be of great assistance to me if they could. I am often told that these poor people really cannot afford to pay for a certificate. A hospital doctor should not be expected to give a free certificate." Mr. Taylor had also said during a discussion as to the course which might be adopted that in his opinion there should be a public medical official paid out of public funds to give certificates for the purpose indicated and a witness from the education department of the London County Council had intimated that some such suggestion had already been laid by him before the Council. The obvious necessity that there should be medical certificates in cases of absence from school through alleged illness will, no doubt, lead to provision being made some day for the obtaining of them by those too poor to pay for them themselves, but the question how they should be obtained and paid for is not very easy to answer. The provision of fees payable from public funds to the medical man attending the patient should commend itself to the medical profession rather than the institution of a public official to inspect and to certify with regard to cases under the treatment of a private practitioner. Such a course would not, however, be without its drawbacks, and the question of expense is no doubt one which would be regarded as a serious one by the ratepayer, both generally and with regard to the comparative cost of any plans put forward.

Fergusson v. *the Malvern Urban District Council.*

After a trial lasting 11 days Dr. J. C. Fergusson has recovered a verdict for £7500 damages against the Malvern district council on the ground that an outbreak of enteric fever at the hydropathic establishment conducted by him, and in respect of which he has already had to pay heavy damages to various plaintiffs who contracted the disease in his establishment, was due to the contamination of his water-supply with sewage, for which contamination the council was responsible. Dr. Fergusson is to be congratulated on the result of the case and all the more so as the defence involved serious charges against him of want of care in the provision of water for the inmates of the house under his control. No fewer than seven questions were eventually left to the jury and it is to be observed that a point of law may be discussed hereafter in the Court of Appeal upon the answers given to two of these, by which the jury found that the plaintiff had no proprietary right in certain water to the contamination of which the enteric fever was ascribed and which flowed into his tank and that he had no licence to use it. By their other answers the jury found that the defendants were guilty of negligence in permitting sewage to escape from their sewer and that the plaintiff was not guilty of contributory negligence in permitting the contaminated water to be conducted to his tank as it was conducted; that the escape of the sewage was the sole cause of the outbreak of enteric fever; and that the outbreak would not have been prevented by reasonable care on the part of the plaintiff.

£500 Damages for Libelling a Medical Practitioner.

Two actions for libel brought by a medical practitioner against newspapers and arising out of the same facts were brought to a conclusion recently before Mr. Justice Darling in the King's Bench Division. In the first the defendants (Edward Lloyd, Limited, proprietors of the *Daily Chronicle*) apologised and settled the action by payment of £25, which they had already paid into court, together with £100 to cover the plaintiff's costs. In the second action the *Star* Newspaper Company, Limited, were the defendants, and evidence was called on behalf of the plaintiff before a settlement was arrived at by which the defendants agreed to pay to the plaintiff £500 damages, with costs as between solicitor and client. The facts with regard to which the two newspapers involved had published matter calculated to injure the plaintiff were of an unusual character and arose out of the crimes of the man Brinkley arrested in April, 1907, for the murder of Mr. and Mrs. Beck by poisoning and afterwards convicted and executed. It appears that when inquiry was instituted as to BRINKLEY'S antecedents it was found that towards the end of 1906 a woman named Bume, living at the house where he was subsequently arrested, had had a fit, and that the plaintiff, Mr. M. J. Williams, who had been called in to attend her, had found her already dead on his arrival. He had afterwards been asked by Brinkley to certify as to the cause of death but had naturally refused to do so and had given evidence at the inquest which followed after making a post-mortem examination by the coroner's order. The evidence which he gave was to the effect that the deceased died from apoplexy and the jury so found. As no question of foul play had arisen at the time of Mrs. Blume's death and as no special inquiry with a view to detect poison had taken place it was thought desirable when the deaths of Mr. and Mrs. Beck occurred to ascertain whether evidence of crime could be traced in the former case also, and by the order of the Home Secretary Mrs. Blume's body was exhumed

and was examined by Sir Thomas Stevenson and Dr. French. At this second examination also the plaintiff was present. No trace of poison was discovered. The organs were found replaced in the usual manner in the cavity of the chest, with the exception of the brain which had no doubt disintegrated during the interval which had elapsed since the first post-mortem examination. The version of this not unnatural circumstance which was printed in the *Star* was as follows:—

POISON DRAMA.

The Exhumation of Mrs. Blume's Body.

It is reported that the exhumation of the body of Mrs. Blume of Maxwell-road, Fulham, which took place at Brompton Cemetery a fortnight back, has proved abortive so far as the discovery of any trace of poison is concerned. Sir Thomas Stevenson and his assistant were unable to make any examination of the organs, in which alone traces of poison, supposing it is present in the body, could ordinarily be detected. Some parts of the organs which it is now desired to examine are, in fact, reported to be missing. It should be explained, however, that this circumstance does not reflect upon any person now concerned in the case, but may be a consequence of the first post-mortem examination which was made at the time of the old lady's death.

This involved so serious an imputation upon the plaintiff's conduct in connexion with the post-mortem examination, for which he alone was responsible, that he was compelled to bring an action to vindicate his character, when he was met not only with the defence that the words were not capable of the defamatory meaning which was assigned to them and were fair comment, but also that they were true in substance and in fact, this latter plea was aggravated, as the judge pointed out at the conclusion of the case, by the placing upon the record of "particulars of justification," including a list of portions of the body alleged to be missing in consequence of the plaintiff's conduct. It is not surprising that in these circumstances it was felt desirable by the legal advisers of the defendant newspaper to settle the case by means of a substantial payment. A jury could hardly have failed to award heavy damages considering that the evidence of Sir Thomas Stevenson was that the whole of the remains had been found by him except the brain; that the placing of it in the cavity of the chest with the rest of the parts removed for examination was proper and usual; and that the disintegration which had apparently taken place had not affected the result of the necropsy, which had not led to the discovery of any trace of poisoning. In addition the plaintiff had given evidence that his practice had been injured by the publication of the libel. The statement and the suggestion made when once shown to be erroneous would, indeed, have been very difficult to excuse and the *Star* could hardly have urged in its own defence an attitude sympathetic as a general rule towards medical science or medical men. The effect of its misstatement, moreover, was likely to extend beyond the individual medical practitioner whose successful vindication of his character is a matter for personal congratulation and who would naturally find among his poorer patients many readers of a halfpenny evening newspaper. The result of the paragraph quoted above might well be to increase the dislike and distrust evinced by many for the holding of post-mortem examinations upon the bodies of their relatives. This feeling of aversion is a natural one and it is highly undesirable that it should be increased by any suggestion that after post-mortem examination the body in question will not receive complete sepulture like any other.

POST-GRADUATE MEDICAL STUDY ABROAD.—The French Association for Post-graduate Medical Study, which is known as the "E.M.I.," asks us to state that it is organising a tour of inspection of the medical and sanitary institutions of Italy from April 12th to 28th. The places to be visited include Turin, Milan, Padua, Venice, Bologna, Florence, Rome, Naples, Pisa, Genoa, and San Remo. The organisation of the tour has been entrusted to Professor Pini, the corresponding member of the association in Italy, and he has the coöperation of the most eminent leaders of the medical profession in that country, including Baccelli, Bossi, Bozzolo, Cozzoline, De Giovanni, Mangiagalli, Marimuni, Mya, Pinzani, Vitali, and Zeri. The complete programme of the tour has been published in the January number of the journal "L'E M.I.," the official organ of the association, and can be obtained, together with any other information that may be required, by sending a stamped addressed envelope to the secretary at the headquarters of the association, 8, rue Francois-Millet, Paris.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 13th, 1830.

CONSUMPTION OF NUX-VOMICA AND COCULUS-INDICUS.

To the Editor of THE LANCET.

SIR,—Although I am no professional man, I have been a subscriber to THE LANCET from its very birth, and am fully aware how useful it has been in exposing delusion, fraud, and humbug. You have occasionally touched upon the sophistication or adulteration of what is taken into our stomachs as nutriment. I do not believe all that the author of "death in the pot" advances, but the subject is an important one, and merits the most serious attention.

By a return made officially from the Custom-house to the House of Commons in the last session, and from other authentic documents in my possession, it appears, that, upon an average of some years there has been an annual importation into Great Britain of

	lbs.
Nux-vomica	30,000.
Coculus-indicus	12,000.

Now, Sir, I wish to ask of your medical and chemical readers, or wholesale druggists, what becomes of this enormous quantity of poison; a trifling quantity is employed in medicine, and for the destruction of vermin, and by poachers we know that a comparatively small quantity of these articles is also used; but if there be any other open, honest, or avowed purpose to which they are applied in any part of the world, it would remove some very unpleasant suspicions, and be very gratifying to many persons to be made acquainted with it.

I am, Sir,
Your most humble servant,

Bath, February, 1830.[1] J. H. G.

[1] The above letter (written 78 years ago) evidently refers to the adulteration of beer, but happily, owing to the provisions of the Adulteration of Food and Drugs Acts following on the labours of the Founder of THE LANCET by his Analytical Sanitary Commission (commenced in the year 1851) and his personal inquiries, this adulteration is a thing of the past.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9240 births and 5692 deaths were registered during the week ending Feb. 8th. The mean annual rate of mortality in these towns, which had been equal to 20·0, 18·5, and 18·2 per 1000 in the three preceding weeks, increased slightly to 18·3 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 18·5 per 1000; the rate in London during the same period did not exceed 18·0. The lowest annual death-rates in the 76 towns last week were 6·2 in Hornsey, 9 9 in Leyton and in Willesden, and 10·3 in York; the rates in the other towns ranged upwards to 25·3 in Liverpool, 27·0 in Merthyr Tydfil and in Birkenhead, and 29·8 in Grimsby. The rate in London last week did not exceed 17·7. The 5692 deaths registered in the 76 towns during the week under notice showed an increase of but 11 upon the number in the previous week, and included 447 which were referred to the principal epidemic diseases, against 409 and 441 in the two previous weeks; of these, 192 resulted from whooping-cough, 73 from diphtheria, 71 from measles, 48 from diarrhœa, 39 from scarlet fever, 24 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases in the 76 towns were equal to an annual rate of 1·4 per 1000, the rate from the same diseases in London being 1·3. No death from any of these epidemic diseases was registered last week in Blackburn, Walthamstow, Leyton, Hornsey, Coventry, or King's Norton; the annual death-rates from these diseases in the other towns ranged upwards, however, to 3·0 in Burnley and in Birkenhead, 3·6 in South Shields, 3·7 in Warrington, and 5·4 in Salford. The fatal cases of whooping-cough in the 76 towns,

which had been 154 and 190 in the two preceding weeks, further rose last week to 192; they caused annual death-rates equal to 2·1 in Sheffield, 2·2 in Birkenhead, 2·4 in Gateshead, 2·5 in Aston Manor and 2·9 in Warrington. The 73 deaths referred to diphtheria showed also a further increase upon the numbers in the two previous weeks, and included 21 in London, three in East Ham, four in Birmingham, two in Stockport, three each in Liverpool and in Manchester, nine in Salford, and three in Leeds. The deaths from measles, which had declined from 141 to 83 in the four preceding weeks, further fell last week to 71; this disease, however, caused death-rates equal to 1·3 in Preston, 1·4 in South Shields, and 1·5 in Burnley. The fatal cases both of diarrhœa and of scarlet fever showed a slight increase; the annual rate from the latter disease was equal to 1·5 in Smethwick and 1·6 in Walsall. The deaths from "fever" were again below the average, but included six in Liverpool and three in Salford. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily declined in the nine preceding weeks from 5581 to 3918, had further fallen to 3867 on Feb. 8th; during the week ending on that day 433 new cases were, however, admitted to these hospitals, against 380 and 405 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 499, 455, and 432 in the three preceding weeks, further declined during the week under notice to 395, but exceeded by 27 the corrected average number in the corresponding week of the five years 1903–07. The causes of 51, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 46 smaller towns. Seven uncertified causes of death were, however, registered last week in Liverpool and five each in Birmingham, Sheffield, and Manchester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 22·2 and 22·3 per 1000 in the two preceding weeks, further rose to 23·5 in the week ending Feb. 8th, and exceeded by no less than 5·2 the mean rate during the same week in the 76 English towns. Among the eight Scotch towns the death-rates ranged from 16·3 and 21·4 in Perth and Aberdeen to 25·4 in Dundee and 31·4 in Leith. The 827 deaths in these eight towns exceeded by 42 the number returned in the previous week, and included 132 which were referred to the principal epidemic diseases, against 158, 142, and 123 in the three preceding weeks; of these, 64 resulted from measles, 32 from whooping-cough, 14 from diarrhœa, 12 from "fever," five from diphtheria, three from scarlet fever, and two from small-pox. These 132 deaths were equal to an annual rate of 3·7 per 1000, which exceeded by no less than 2·3 the mean rate last week from the same diseases in the 76 English towns. The 64 fatal cases of measles corresponded with the number in the previous week, and included 55 in Glasgow, three in Greenock, and two in Dundee. The 32 deaths from whooping-cough exceeded the number in the previous week by six; nine occurred in Glasgow, eight in Edinburgh, six in Leith, and three in Dundee. Of the 14 deaths attributed to diarrhœa, seven were returned in Glasgow, three in Dundee, and two in Aberdeen. Of the 12 deaths referred to "fever," seven were certified as cerebro-spinal meningitis and five as enteric fever; these 12 deaths included seven in Glasgow and four in Dundee Three of the five fatal cases of diphtheria and two of the three of scarlet fever were returned in Glasgow. Both of the fatal cases of small-pox occurred in Leith. The deaths referred to diseases of the respiratory organs in these eight towns, which had been 178 and 179 in the two preceding weeks, declined to 171 in the week under notice, and were seven below the number from the same diseases in the corresponding week of last year. The causes of 22, or 2·7 per cent., of the deaths in these towns last week were not certified or not stated; in the 76 English towns the proportion of these uncertified deaths last week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 31·2, 29·5, and 25·5 per 1000 in the three preceding weeks, further declined to 22·3 in the week ending Feb. 8th. During the first six weeks of the current quarter the death-rate in the city averaged, however, 26·7 per 1000, whereas the mean rate during the same period did not exceed 18·0 in London and 19·5 in Edinburgh. The 169 deaths of Dublin residents registered last week showed a further decline of 24 from the high numbers in recent weeks, and included but four which were referred to the principal epidemic diseases, against nine and six in the two preceding weeks; these four deaths included two from "fever" and one each from measles and whooping-cough, no death being registered either from scarlet fever, diphtheria, small-pox, or diarrhœa. These four deaths from epidemic diseases were equal to an annual rate of 0·5 per 1000, the death-rate from the same diseases last week being 1·3 in London and 1·5 in Edinburgh. The 169 deaths from all causes in the city last week included 19 of infants under one year of age and 70 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, but those of elderly persons were again exceptionally numerous. Six inquest cases and four deaths from violence were registered during the week, and 64, or 38·0 per cent., of the deaths occurred in public institutions. The causes of five, or 3·0 per cent., of the deaths in the city last week were not certified; in London the causes of all but three of the 1629 deaths were duly certified, while in Edinburgh the proportion of uncertified deaths was 2·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon R. Miller to the *President* for Deptford Yard.

ARMY MEDICAL SERVICE.

Colonel John F. Williamson, C.B., C.M.G., is placed on retired pay (dated Feb. 6th, 1908).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Jan. 29th, 1908):—Anthony H. Waring, William A. Ward, Edward W. W. Cochrane, Arthur H. Morris, Samuel A. Archer, and Robert W. Clements.

Captain John I. W. Morris retires, receiving a gratuity (dated Feb. 8th, 1908).

Lieutenant Charles P. Thomson is seconded for service with the Egyptian Government (dated Jan. 1st, 1908).

Major F. G. Faichnie has taken up duty in the London District and Lieutenant G. De la Cour has left for India. Lieutenant-Colonel W. G. Birrell has embarked for Mauritius.

The undermentioned Lieutenants are confirmed in that rank:—Winfrid K. Beaman, George F. Dawson, Thomas McC. Phillips, Harry V. B. Byatt, Harold S. Dickson, Gerald Petit, Forbes J. Stuart, John B. Hanafin, Harold Gibson, William R. O'Farrell, John A. Renshaw, Ralph de V. King, Cecil T. Conyngham, Dalziel B. McGrigor, Richard G. S. Gregg, William A. Spong, Herbert W. Carson, Henry P. Hart, Francis T. Dowling, Richard F. O'T. Dickinson, Harold T. Treves, Arthur E. B. Jones, Benjamin A. Odlum, and Alexander Hendry.

ROYAL ARMY MEDICAL COLLEGE.

Colonel Douglas Wardrop to be Commandant and Director of Studies, vice Lieutenant-Colonel H. E. R. James, R.A.M.C. (dated Feb. 4th, 1908).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Charles G. Maclagan to be Surgeon-Major (dated Jan. 29th, 1908).

VOLUNTEER CORPS.

Rifle: 7th Volunteer Battalion, The Royal Scots (Lothian Regiment): Supernumerary Surgeon-Lieutenant-Colonel J. B. Ronaldson (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, 2nd Lothian Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel. (dated Jan. 20th, 1908). 5th (Glasgow Highland) Volunteer Battalion, The Highland Light Infantry; Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Q. Chalmers resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Jan. 21st, 1908).

TERRITORIAL FORCE.

In a printed reply circulated with Parliamentary papers on Feb. 7th, Mr. Haldane has informed Mr. Crooks that, as has already been announced in THE LANCET of Dec. 14th, 1907, p. 1718, it is proposed to appoint Surgeon-Lieutenant-Colonel (Hon. Surgeon-Colonel) P. B. Giles one of the medical officers of the 1st Herefordshire Rifle Volunteers, to the office of principal medical officer of one of the London divisions of the Territorial Force. He is (adds Mr. Haldane) commandant of the Volunteer Ambulance School in London, an institution which has been most successful in training a large proportion of the Volunteer medical officers. He resides near London. Seniority was not the determining factor in selecting officers for the appointments, but those officers best fitted to carry out the work were chosen, seniority being given its due weight.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals and Fleets Sir John Denis Macdonald, K C B., F.R S., R.N., on Feb. 7th, at Southall, aged 82 years. He entered the service as surgeon in 1849, was promoted to staff-surgeon in 1859, to fleet-surgeon in 1866, to deputy-inspector-general in 1875, to inspector-General in 1880, and retired six years later.

Surgeon-General William Henry Rean, Indian Army (retired), on Feb. 6th, aged 81 years. He entered the East India Company's service in 1853, and in 1857 served with the Madras Fusiliers in the attempted relief of Cawnpore. After the massacre he was appointed chief medical officer in charge of the standing hospital at Cawnpore, where he contracted cholera. After serving as deputy-surgeon-general at Kampti he retired in 1881.

The *Times* states that about 100 boys belonging to the training ship *Impregnable* at Devonport are in hospital, the majority suffering from influenza which is very prevalent throughout the port.

A Royal Naval hospital is to be opened at Queensferry with a staff of one fleet-surgeon or staff-surgeon, one surgeon, one chief sick-berth steward, and two sick-berth attendants.

Correspondence.

"Audi alteram partem."

HOSPITAL ALMONERS.

To the Editor of THE LANCET.

SIR,—In view of the letters of appeal from general practitioners and others that appear constantly in the daily papers against the deplorable abuse of the out-patients' departments of our London and provincial hospitals, I venture to call the attention of your readers to a system which is slowly but surely gaining ground among the hospitals of this vast metropolis. The fact that the out-patients' departments are not only centres of startling abuse but also the means of pauperising a large proportion of the working classes has been brought before the public from time to time for the last 30 years.

About 12 years ago the Royal Free Hospital, recognising the responsibility incurred in this respect, created the post of almoner. A lady, duly qualified by experience and knowledge and being intimately acquainted with the mode of living and ways of thought obtaining amongst our poorer classes, was appointed to the post. Her duties were: 1. To interview all new patients to the hospital after such patients had been seen by a member of the staff and to investigate thoroughly each case by means of outside visitors and societies. 2. To report to the authorities all cases which were not suitable for free medical treatment. 3. To provide from the funds of the Hospital Samaritan Fund, in coöperation with outside charities, all surgical instruments, convalescence, &c., recommended by the medical staff except in such cases where the patients or their family were able to provide such instruments and treatment themselves. 4. To ensure that the home conditions of the patients should, so far as possible, be suitable, and that the directions of the physicians or surgeons as to diet, fresh air, exercise, or rest should be carried out.

It was not long before the system I have briefly sketched recommended itself to the authorities of other hospitals and after two or three years Westminster and St. George's Hospitals created similar posts and to-day there are no less than nine well-known hospitals where almoners are working. The system leads to economy both in the time of the staff and the expenses of the hospital and its satisfactory results may be attested by the fact that *no hospital that has appointed an almoner has ever seen reason to recall its decision.* The system must of necessity appeal to any hospital with a medical school in that it protects the interests of the general practitioners who have been, or are being, trained within its walls. As no patient is dismissed without the consent of the physician or surgeon who has examined the patient it will be easily seen that the interests of the medical school as to clinical material are guarded.

The daily letters of thanks and approval from outside doctors show that the general practitioners realise that a very potent method has at last been set on foot to safeguard their interests. The work of an almoner is both difficult and arduous and calls for a very special training and careful selection of candidates. A hospital almoners' council has lately been formed for the purpose of arranging the training and selection of almoners and for providing suitable candidates for London and the provinces.

It is in the hope that this letter may explain briefly the work of an almoner and thereby prove that the out-patients' departments need no longer be a cause of apprehension to the outside doctors or a centre of pauperisation and abuse that I have ventured to encroach upon your valuable space. May I add that I shall be pleased to give any further information on the subject either by letter or by appointment to any of your readers who may be interested in the question.

I am, Sir, yours faithfully,

A. S. MORSE, Capt. and Sec.

Hospital Almoners' Council, Denison House, Vauxhall Bridge-road, S.W., Feb. 11th, 1908.

PLEURAL EFFUSION AND ITS TREATMENT.

To the Editor of THE LANCET.

SIR,—Dr. Harry Campbell tries, but in vain, to make the worse appear the better cause, and I should think he would make a very obstinate juryman whom the other 11 might have some difficulty in convincing. I can therefore scarcely hope to convert him from the error of his ways, so I shall not trouble much about this lost sheep, but I shall try and show the ninety and nine, who have not gone astray, the utter worthlessness of his facile pen. I shall now analyse his letter paragraph by paragraph.

First.—His little pleasantries do not trouble me much and do not cover his retreat from an untenable position in citing a condition which does not exist. He knows as well as I do that Dr. Harry Campbell is not the man to make "concessions for the purpose of humouring Sir James Barr," or anyone else. There is a very considerable difference between an adherent and a non-adherent pleura which cannot be glossed over by saying that "they did not affect one way or the other the main issue between us." The elasticity and tautness of the lung are thus readily affected, and I cannot allow Dr. Campbell to shift his position at his own convenience without exposing his retreat to my merciless flank fire. In my first letter I agreed that the elasticity and tautness of a substance are two quite different things, but the continuous tautness of the lungs depends on their elasticity and the pressure of air within them. I say so still.

Second.—In the first 12 lines he gives his whole show away and practically accepts my contention, but his illustrations are not very happy. "It is not the elasticity of the traces attached to a wagon which causes the wagon to be pulled along." Neither is it the *tautness* of the traces, nor the *tautness* of the lungs which exerts the traction, but the force that causes and maintains the *tautness*. If the stress or force applied to a series of loosely connected wagons be intermittent they bump against one another, but if they be braced up and have an elastic connexion through their buffers all this bumping disappears. The elastic lungs are held against the thoracic parietes by the atmospheric pressure within the lungs, a pressure amounting to about 760 millimetres of mercury, less, under ordinary circumstances, a few millimetres of mercury due to the elasticity of the lungs and the variations in the intrapulmonary pressure during the different phases of respiration. The greatest possible fall in the intrapulmonary pressure, as in Müller's experiment, could not

materially affect their pressure against the internal surface of the thoracic parietes, but if the lungs were not elastic and free to move with the thoracic parietes even this great pressure could not keep the lungs taut and there could be no intrapleural negative pressure. We are therefore forcibly driven to the conclusion that at least healthy lungs can only be kept *taut* by their elasticity. If the lungs were non-elastic and braced up from root to parietes, then each time the intrapulmonary pressure exceeded the extrathoracic atmospheric pressure the lungs would cease to be *taut*, and this would occur with every expiration. In this case the lungs would be *taut* at the end of inspiration and during this fractional part of a second would render respiratory assistance to the circulation, but during the rest of the respiratory phase there would be a positive obstruction to the circulation. With an *intermittent* tension or stress the *tautness* of the lungs can only be *continuously* maintained if they be elastic.

Third.—He falls foul of his quondam friend, Dr. D. W. Samways, for failing to recognise his nice distinction between the tautness of the lungs and the elasticity which keeps them taut. "Let us for argument's sake suppose the lungs in the case in question suddenly to be rendered perfectly non-elastic, their tautness, however, remaining unaltered." He really upsets my gravity, and I would suggest to him that a much neater way of putting it would be, suppose we suppose an impossibility. If a stretched piece of rubber suddenly lost its elasticity, would it remain taut? I trow not. I have often seen rubber lose its elasticity but I have never afterwards seen it remain taut. With a constant weight attached to a piece of fibroid tissue it might remain tense, but with an intermittent stress such as occurs in respiration it could not continue *taut*.

Fourth.—He refers to the experiments of Valsalva and Müller which, I think, were much more fully explained in my paper on the Effects of Respiration on the Circulation in the *British Medical Journal*, April 20th, 1907. In his statement of the Valsalva experiment there is nothing new but in Müller's experiment he says what is not true: "If at the end of a deep expiration, when the pulmonary tissue is relaxed and the lungs cease to exercise traction, a powerful inspiratory effort be made with closed glottis, the greatly lowered intrapulmonary pressure thus effected will give rise to considerable traction." At the end of deep expiration the pulmonary tissue is not relaxed and the lungs do not cease to exercise traction. In this experiment a big chest, like Dr. Campbell's, might produce a fall in the intrapulmonary pressure of 80 millimetres of mercury, which would reduce the intrapulmonary pressure from 760 to 680 millimetres of mercury. The elasticity of the lungs being a constant can be neglected, and, moreover, we are not at present considering the intrapleural or intrathoracic pressure. It is ridiculous to say that 680 millimetres of mercury can make the lungs more taut than 760 could. This great fall in the intrapulmonary, and consequently in the intrathoracic, pressure makes an enormous difference to the blood-vascular cavity within and without the thorax, so the blood is driven in, not sucked in, with a force of 80 millimetres of mercury *plus* the elasticity of the lungs. It is really painful to me to have to point out such palpable errors.

Fifth.—"Hypertrophous emphysema" is a misnomer. Hypertrophy means increased nutrition and increased function, there is neither in emphysema. "The inspiratory muscles are throughout life ever on the watch to maintain pulmonary tautness at a certain mean level, with the object of maintaining a constant suction on the heart, and thus facilitating diastole," &c. So far as the inspiratory muscles, which only act intermittently, are concerned they can only maintain tautness at the end of inspiration and apart from the elasticity of the lungs can maintain no constant suction. David Barry at the beginning of last century did not, and could not, fall into such egregious error. It would be a great waste of time and space to follow his suppositions about what happens, or should happen, in cases of "hypertrophous emphysema." It is sufficient to say that as the elasticity of the lungs disappears so the intrapleural and intrathoracic negative pressures gradually lessen.

Sixth.—Now for his fibroid phthisis. "If the lungs are not taut, and if pulmonary traction is not increased, how are we to account for the sinking in of the upper part of the chest not infrequently met with in chronic phthisis, as well as in the more acute form of the disease?" Has he never seen the chest walls caved in by the atmospheric pressure in a child suffering from laryngeal diphtheria? This condition simply proves that the inspiratory muscles are quite incapable of expanding the chest beyond the expansile power of the lungs. The infraclavicular spaces may get flattened whether there be many adhesions or not. The fibroid apices do not drag in the chest walls, but being non-elastic they take no part in filling up the thorax during inspiration; the remaining elastic portions increase the *negative pressure in the whole thorax* during inspiration, and consequently the portions of the chest over the non-expansile portions of the lungs are flattened in, not dragged in; in the acute forms of the disease there are no adhesions to drag them in.

Seventh.—This paragraph is entirely made up of suppositions without an attempt to prove any of them.

Eighth.—There is here and elsewhere a little assumption at not understanding what I mean. I can assure him once for all that when I say intrapleural I mean intrapleural, intrathoracic I mean intrathoracic, and intrapulmonary I mean intrapulmonary, and I am not going to assume that there is any one of your readers who does not know as well as Dr. Campbell the difference in these expressions. The rest of the paragraph is chiefly made up of irrelevant remarks about Müller's and Valsalva's experiments. The conditions of these experiments are well known. I have previously shown that in Valsalva's experiment the intrapulmonary pressure can be raised so high as not only to abolish the intrapleural negative pressure but raise the intrathoracic pressure to such a *positive height as to shut out the blood from the chest*, reduce the heart to about half its size, and almost bring it to a standstill. In this experiment the lungs are made *very taut* under a pressure of about 860 millimetres of mercury. What, then, is the use of talking about the *suction* of the chest depending on the *tautness* of the lungs?

Ninth.—He is driven to very narrow straits when he says: "I neglect to mention bronchiectasis and the enlargement of tubercular cavities as a means of filling up enlarged chests in cases of fibroid lungs." Emphysema still remains the principal cause.

Tenth.—Here he entirely begs the question when he says: "In so far as the bulbous condition of the fingers in fibroid phthisis is due to obstructed circulation it results from the widespread destruction of the pulmonary blood-vessels." It does not matter how many blood-vessels were destroyed, if *his taut lungs constantly maintained a negative intrathoracic pressure there could be no obstruction to the systemic venous circulation and there should be no bulbous fingers.*

Eleventh.—He tries to wriggle out of this close corner by saying that I refer to "non-elastic lungs" and he to "*comparatively* non-elastic lungs." This is a degree of comparison which in no way affects his bubble which I pricked.

Twelfth.—He does me the credit of quoting a very long abstract from my letter which is sufficiently explicit and which he vainly tries to subvert. Now the inspiratory muscles are "just competent to expand the chest to its potential maximum, as may be observed in advanced cases of hypertrophous emphysema." In these cases the lungs lose their elasticity, consequently they cease to be taut, and the *intrapleural negative pressure diminishes or disappears.*

Thirteenth.—In conclusion he hopes that "the energy expended may not be entirely lost on Sir James Barr." Well, it all depends on how you look at it; personally, I think he has wasted a lot of my valuable time over a trivial storm in a teapot. The only consolation I have is that I may have stimulated some of your readers to study the question of elasticity as applied to the lungs, and may have prevented them falling into the traps of error set for them by Dr. Harry Campbell. Consolation prizes are not, as a rule, very valuable, so if he wish my forgiveness he should send me a cheque for not less than 100 guineas.

I must now deal with the letter of Dr. Samways in your issue of Jan. 25th.

Dr. Samways intrudes as an uninvited guest to this feast of reason and flow of soul in order to set both Dr. Harry Campbell and myself right. I am always willing, nay, anxious, to learn, but in order that my knowledge may be based on a firm foundation I must inquire into the quality of the instruction and the capacity of the instructor. As my old friend, the late James Finlayson, said about examiners, that the first part of their work was to mark themselves up 100 per cent., and then accordingly, as they thought that the examinee approached their ideal standard of perfection they gave him anywhere between 80 and 100 per cent., but Dr.

Finlayson would like to have had the examiners examined and see if they were really worth 100 per cent.

I shall now proceed to criticise my critic and see what percentage of *stress* and *strain* this *elastician* will stand before we come to the breaking point. I have no wish to *snap* him *abruptly* so I shall apply the *stress* gently.

He lays down a very rigid definition of *elasticity*, to which I offer no objection, though it is not one to which professional physicists closely adhere, as it enables me to see what he intends to mean. Of course, your readers, like myself, expect that having settled the matter according to his own ideas, he at least would stick to the definition which he has adopted—I say adopted because after all the definition is not his own. Let us see how his definition works out. He tells us that solid bodies like steel and ivory are much more *elastic* than even such perfectly *elastic* bodies as the various gases, but he forgets to say that the range of elasticity of those highly elastic bodies is very limited; if you exceed that extremely narrow limit you fracture or rupture or break the body, or you may give it a permanent *set*, so that it does not return to its original form. If you attach a certain weight to a steel wire sufficient to stretch it one-twentieth of an inch, then double the weight will stretch it one-tenth of an inch, but if you go on doubling you quickly exceed the limit of its elasticity, and the wire either *snaps* or takes a permanent *set* and will not return to its original length on the removal of the weight—you have exceeded the very narrow limit of elasticity in this highly elastic body. If you take the blade of a sword made of finely tempered steel you will find it much more elastic than the iron or steel from which it was made, yet, according to Dr. Samways, I presume this should not be, because he says "elasticity is a property fixed in amount for any substance." Again, if you take the sword and convert it into a large tube of the same length it again becomes rigid, and if you attempt to bend the tube the force required quickly breaks it. How is it that the great range of the sword's elasticity has practically disappeared? The molecules on the convex side of the attempted curve would now have a much longer way to move than previously, and when sufficient stress is put on to move them and manifest their elasticity those on the outer curve jump apart beyond the limits of their elasticity and the tube breaks. The same thing happens with such a highly elastic body as glass. This is all very nice but it does not fit in very well with medical ideas of elasticity as found in the human body. According to Dr. Samways' definition the ribs are much more elastic than the costal cartilages, the femur much more elastic than the ribs, and the more rigid the chest walls the more elastic do they become as it takes a greater force to produce any given deformation. An unyielding rope is more elastic than an extensile one; it is true that it snaps more readily, but what does Dr. Samways care for that when it requires more force to produce a given amount of stretch. "Rubber yields considerably to a small force and is therefore comparatively inelastic. It possesses the quality of elasticity to a striking degree but in a low measure." This last sentence is a distinct contradiction of terms; it is a misuse of the English language to say that anything that possesses a quality in a low measure has it in a striking or high degree. It is not a question of small quantity and high tension like the high frequency current, because it is just in the tension that the rubber is deficient.

Having some slight regard for your space I shall not diverge into a sidepath to discuss the unconscious cerebration of Dr. Samways' cat as she lay curled up and quietly asleep on the hearth dreaming of her far-off home, situated perhaps south-south-east by south from the hearth, and wondering when the potential energy of her limbs would become kinetic and enable her to speed her way through thick woods and devious paths unaided by a compass; nor shall I soliloquise on the dormant moral qualities of his untried gentleman or saint who, unlike an elastic body, does not require a double force to resist a double temptation. There may be some irreverent enough to suggest that this gentleman is an imbecile or a general paralytic. I know several men who would have no hesitation in writing a cheque for a sum much more than sufficient to pay off the National Debt; by such the temptation of a five-pound note is easily resisted. These may be, and no doubt are, very interesting psychological studies, but they have no more to do with elasticity than the moon has to do with green cheese.

When Dr. Samways says that I am "certainly in error" he simply means that I do not agree with his definition of elasticity, and under the circumstances I am very pleased to be in error. "This property of a substance," to which according to Dr. Samways you can neither add to nor take therefrom, "is measured quantitatively by the amount of force required to produce a given distortion in a given volume or unit of the substance." This is uncommonly like my statement, but perhaps not quite so well expressed, that the more taut or stretched the lung (of course, within the limits of its elasticity) the greater will be its elasticity or tendency to recover its form after being stretched. If a force of two pounds stretch a piece of rubber one inch, four pounds will stretch it two inches, and it will resist further stretching by a force of four pounds, and when the weights are removed it will recover its former dimensions by a force gradually tapering down from four pounds to nothing.

Now listen to what this critic says: "Its elasticity and tendency to recover cannot be measured by stretching; it was inherent in it and fixed in quantity from the first." Here he uses "elasticity" as an abstract quantity of the substance and he uses "tendency to recover" as absolutely synonymous, although I have just shown that it is a measureable force equal to the power to which it has been submitted. He might as well use potential and kinetic energy as synonymous terms, or mass and weight as one and the same thing. From experiments on tuning-forks it has been found that no matter how slightly or how closely the limbs are approached or how far they are separated it takes them the same time to recover their original position, and therefore it follows that the greater the force used the greater must be the tendency to recover. The vibrations of the tuning-fork from the greatest excursion down to silence all occupy the same time, so that with the diminution in the excursion the velocity is also diminished.

Here is another example of his way of reasoning: "In this way the negative pressure in the pleural sacs is created by muscular effort and not by elastic recoil of the lungs." He forgets that if the lungs were non-elastic and non-resistant but free to follow the movements of the chest-walls there would be no negative pressure in the pleural cavities. This is what practically happens in emphysema where the lungs have lost their elasticity and gradually expand until at last even the recoil of the chest walls is lost. "It would be even greater, as Dr. Campbell contends, if the lungs did not expand." In this case the inspiratory muscles would have to pull out unaided the thoracic walls against the atmospheric pressure, and this I believe they cannot do. "If the lungs be comparatively rigid the whole force of the inspiratory muscles can be expended on reducing the intrapleural pressure." For how long? The fractional part of a second; under such circumstances the lungs could only be taut at the end of inspiration, and relaxed during the rest of the respiratory phase. "One would have imagined that the elastic tissue would have arranged to be at rest when the thorax was at rest, but it strangely chooses, from birth onwards, never to assume the unstretched condition." Well, nature does not seem to have taught him much when he cannot see such obvious utility, and all I feel inclined to say is, thank God there was no amateur physicist present at the Creation.

If you allow this discussion to go on for about a couple of years I think we might settle the meaning of *elasticity*, if some new definition does not crop up in the meantime. Then I shall leave the rest of the English language to Dr. Campbell and Dr. Samways to settle, but I would take the liberty of suggesting to them that they might start with the distinctions between tweedledum and tweedledee which would serve as much practical utility as their contributions to elasticity.

I am, Sir, yours faithfully,

Liverpool, Feb. 6th, 1908. JAMES BARR.

MINISTRY OF PUBLIC HEALTH.

To the Editor of THE LANCET.

SIR,—The article in the current number of THE LANCET on a Ministry of Public Health emphasises the crux of the proposition. It is quite a necessity that such a Minister should, in general terms, have greater powers for public health than at present exist, and equally so his influence be real with the Treasury. This is clearly recognised by myself and others in this country who take an active interest in the matter, such as Sir T. Clifford Allbutt. It is shown in articles dealing with the subject since 1902, in which it is

reasoned that such a Minister should have Cabinet rank and, if possible, have had an expert training.[1]

Surgeon-General Fulton writes that this question, which I propose to bring before the Congress on Tuberculosis at Washington, is engaging the attention of the American Public Health Association, which has appointed a standing committee, representing the United States, Canada, and Mexico, to promote such departments. Its next meeting will be at Winnipeg in the summer. That the various bodies in this country interested in public health will follow this lead I feel certain, and there is no time like the present for their action. I am, Sir, yours faithfully,

Brighton, Feb. 8th, 1908. F. G. BUSHNELL.

THE QUESTION OF HOODS.

To the Editor of THE LANCET.

SIR,—I noticed in the report of the quarterly meeting of the Council of the Royal College of Surgeons of England that the Council refused to accede to the fifth request of the meeting of Fellows and Members—viz., "That a hood should be added to the gown already worn by Fellows and Members." I consider the excuses very lame.

Firstly, "as the hood was generally understood to be distinctive of a degree, and in this sense it formed part of the academic costume of a university, it was considered that it would not be appropriate for a *college*." The *College* of Preceptors grants hoods to its Fellows and Licentiates; King's *College*, London, grants a hood to its Associates (A.K.C.); the *College* of Organists grants a hood to its Fellows; and all theological *colleges* grant hoods to their Licentiates who are not graduates of a university (*vide* "Whitaker's Almanack").

Secondly, "as hoods did not appear to be in general use among colleges of similar standing to the Royal College of Surgeons of England." The Council forgets that it was the *first* to grant a cap and gown to its Fellows and Members and was followed by the Royal Colleges of Surgeons of Ireland and Edinburgh and the Society of Apothecaries. So as the Council of the Royal College of Surgeons of England was the *leader* in the gown, so it should be in the hood.

I would suggest that the hoods be: for Fellows, the same shape as a Cambridge M.A. but made of crimson satin lined black; for Members, the same shape but made of black stuff lined with crimson satin.

I am, Sir, yours faithfully,

Feb. 7th, 1908. J. M. CARVELL.

To the Editor of THE LANCET.

SIR,—The present Council of the Royal College of Surgeons has thought fit to reject the resolution of the annual general meeting of Fellows and Members to grant a hood to its alumni. No credit can attach to it for the temporary delay of this obvious and advantageous adjustment, and especially as it only bases the objection to it on the want of precedence. Graduates of the Royal College of Surgeons have quite as much right to claim, and have often shown, their equality of attainments to those of many of the arts and professional degree holders, and with them equally to lay claim to possess the distinction of a hood.

Although the medical colleges in London have not yet taken up teaching, they, as of old tradition, belong to a university standard, and which has been almost always an antecedent in the history of the part formation of all universities. They belonged to a heightened status, and, provisionally, on a level with a university. From that position the Newcastle College of Medicine, the old College of Physicians before the decadence, the Liverpool University College, Owens College, Firth College, and other Midland colleges have all been on a sufficient equality and superiority to bestow the right, or *ad eundem* right, to grant hoods to their diploma or degree holders. So, although we do not so foolishly set such store as the lawyers do on perpetual precedence, still there undoubtedly is precedence for this reasonable accomplishment of possessing a hood by the Royal College of Surgeons, and in spite of whatever the Council chooses to say against me.

When supporting my resolution for a hood at the annual meeting, I spoke on what I thought was the origin of the hood. I think masters or teachers were the first ones to wear them, as early as the middle ages, in colleges as well as in universities. Surely, then, the old surgeons were exactly in that same position. For they, even more than the physicians or the university men, were called upon as masters and teachers to fully instruct professionally their students and their apprentices. But these masters of their craft on being formed into a college aimed at, and took, by their constitution, a much higher position still. Likewise when the physicians formed themselves into the self-same higher collegiate position, they all wore hoods. Indeed, Charles II.'s mandate of 1674, and onwards, forced upon the members the university grade, and which thus constituted the collegiate position. So the pronouncement of the present Council of the Royal College of Surgeons cannot rest justly on its negative argument.

The surgeons, as separate from the ancient illegitimate practitioners, had always been at the head of the profession, above the grocers, above the apothecaries, above the barbour-surgeons, and above any of the universities in their own art and craft, though for convenience they have joined one or other of those bodies. Thus, from a business point of view, it is ill grace enough for the Council to indulge what seems a perpetual neglect discriminately against the body of the College; whilst benefits and privileges keep on accruing more and more to outside opponent bodies, and very much to the detriment of its members. That is why I have traversed its statements, and wish it to acquiesce in the general needs of the situation. For it must be apparent if it accepted fresh control, by both Fellows and Members together, there would be an end to any of the antiquated subservience amongst such an educated body of members where they remain unable to ratify their own resolutions. Reference has been made above to the collegiate status of the physicians which justified the equivalent usage with the university of the hood. The only other medical body in London to search for any corresponding trace of conformity would be the Society of Apothecaries. And, by Mr. C. R. B. Barrett, it is recorded, in 1698, that the Livery of the Apothecaries, when the King (William III.) made a public procession, were in their allotted place, and they wore both gowns and hoods.

Again, quite outside the amply sufficient medical references, there do happen to be confirmatory precedents for granting a hood. Of course, the Royal College and Academy of Music are merely scholastic or training institutions and having certificates, and on that account they purposely remained unmentioned in my speech. But, besides music guilds containing graduates, both the College of Preceptors and the Royal College of Organists *have* attempted, in London, to satisfy the university standards as colleges by giving a higher grade of diploma when such colleges have existed without a practical university. These bodies were consequently specially singled out by me and mentioned as precedents. And I have their regulations actually by me and where they certainly do grant hoods. So, except for the consummate ease of criticism and opposition which is unworthy of attack, I hold that the Council of the Royal College of Surgeons had no justification whatever to issue its inappropriate *démenti*. At the time of the meeting, as now, I wished to suggest an improvement of the present incomplete academic dress of the College. If there are to be academicals at all they should have a hood attached, and not, as without the hood, liable to be mistaken by the public for the cloth garment of a verger or even that of the undergraduate status.—I am, Sir, yours faithfully,

Bognor, Feb. 8th, 1908. H. ELLIOT-BLAKE.

REMOVAL OF AN OPEN SAFETY-PIN FROM THE ŒSOPHAGUS OF AN INFANT.

To the Editor of THE LANCET.

SIR,—Dr. D. R. Paterson's case and comments in your issue of Feb. 1st are interesting and instructive. Certainly the most rational plan in removing foreign bodies from the food- and air-passages is that which removes them through the mouth by a skilful grasp and help from the eye. This plan, however, except in the most simple cases, must, in the nature of ordinary practice, be confined to specialists. I was interested in Dr. Paterson's article in the *British Medical Journal* on œsophagoscopy, but did not practise it, there being no instruments available. I shall, however, take his advice and attempt the experiment at the first opportunity. I am

[1] See The Evolution of our Sanitary Institutions: a Plea for a Minister of Public Health, 1907, to be obtained from the Sanitary Publishing Co., 5, Fetter-lane, London, E.C.

doubtful, however, whether the most skilful œsophagoscopist would have had success in the case quoted owing to the infant's size and age, but it is comforting to know that if he fails intestinal peristalsis with the patient in the recumbent posture may successfully remove the offending body without having recourse to a cutting operation.

I am, Sir, yours faithfully,

Oldham, Feb. 2nd, 1908. J. S. MANSON.

IS THE DEATH-RATE THE BEST MEASURE OF SEVERITY IN DISEASE?

To the Editor of THE LANCET.

SIR,—May I ask you to insert the following correction in my article published in your last number under the above title? In Table II. the grand total should be 1823·8, not 183·8. I am, Sir, yours faithfully,

New Cross-road, S.E., Feb. 11th, 1908. F. M. TURNER.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—The Memorandum of the Education Board on the Medical Inspection of School Children recommends that it shall be carried out "under the direct supervision of the medical officer of health," and goes on to say that "some authorities will find that the teachers are able to undertake without undue strain a share of the work of furnishing data respecting each child and even perhaps to carry out some portion of the inspection." As a matter of fact, the teachers, with the aid of a school nurse, could carry out the whole inspection after a fashion; the teacher could fill in the names, ages, addresses, heights, and weights of the children, and could test their sight and hearing; the nurse could inspect their skins, teeth, and throats. Finally, to the children found defective the head master or mistress could give cards advising their parents to take the child to an oculist, dentist, aurist, or, if it is thought he could be trusted, to an ordinary doctor.

But the Memorandum does not stop at inspection, but goes on to say that school nurses are "to assist in carrying out medical advice concerning simple complaints"; similarly the medical officer (education) of the London County Council tells us in his report that "it is quite absurd to say a nurse cannot recognise ringworm." It is; a nurse can do anything she is trained to; woman doctors recognise and treat all diseases, and what makes the woman doctor is not the degree but the training before and after graduation. Nurses could therefore treat cases under the supervision of the medical officer of health. That they should do so is, I submit, absolutely wrong; it is as if in a hospital the surgeons and house surgeons were abolished and the surgical cases treated by the nurses under the supervision of the sanitary engineer. Local authorities themselves do not seem quite to approve of nurse treatment and are beginning to appoint junior members of the profession to hold office for a year or two as assistants to the medical officer of health, primarily to inspect school children, but also to discharge any other duty their chief may delegate to them. But this, too, is wrong; the treatment of disease is not a minor matter, one to be safely left to medical underlings and "suitable persons"; the treatment doctor must remain the equal of the more recently invented preventive doctor. To separate simple ailments from complex is impossible; the man who never sees a simple case will not understand a complex one; the profession cannot survive the confiscation of its experience.

Whether or not there should be State treatment is a matter on which opinions will differ; it will be decided not by us but by education authorities; we, however, can share in the decision by our votes and by becoming members of local councils and of health and education committees. If State treatment is to come it must be properly carried out; there will probably be no question between whole- and part-time appointments, for there will be no work left for doctors to do in their own time; private practitioners may read their fate in that of private teachers; voluntary hospitals in that of voluntary schools.

I am much obliged to "A Lawyer" for his answers to my former questions.[1] If his kindness is not exhausted I should like to ask one more. If a medical officer of health supervises the treatment of simple ailments by a school nurse is he liable to actions for malpraxis; and can the General Medical Council remove his name from the Register for covering? If this is done can he continue to hold his office? I am, Sir, yours faithfully,

Feb. 8th, 1908. J. S.

[1] THE LANCET, Jan. 4th, 1908, p. 51.

THE DESTINY OF CASE-BOOKS.

To the Editor of THE LANCET.

SIR,—I had an experience quite as unpleasant as that related by your correspondent "M.R.C.S." concerning the destiny of case-books. Some years ago I consulted a West-End specialist. I knew him pretty well and he showed me his case-book then in use, and for my comfort explained that it was written in a shorthand invented by himself. A few months later this physician died and I received an envelope which contained a letter from his widow stating that she had disposed of the practice to Dr. X. There was another letter from Dr. X explaining that he had purchased the practice and had all the case-books of the deceased consultant. Remembering that the case-books were in cypher I hoped they would be useless; their proper destination was certainly the fire. The first doctor was a gynæcologist.

I am, Sir, yours faithfully,

Feb. 8th, 1908. DOMINA.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Annual Meeting; The Position of the Abattoirs.

THE annual meeting of the subscribers to the Royal Infirmary was held on Jan. 29th. Allusion was made by the treasurer in flattering terms to the retirement of Mr. Rushton Parker from the active staff. Mr. Parker had had a connexion of 30 years with the Royal Infirmary. For 12 years as assistant surgeon and 18 years as honorary surgeon he concentrated his care and attention on the hospital to which he unsparingly devoted his best ability and time. Beds had been endowed during the year by Miss A. W. Hignett, Mr. James Lister, and Mr. Bruce Ismay in memory of their parents. The contribution from the Hospital Sunday and Saturday Funds had been £3378. Legacies, always a varying source of income, amounted to £1246. The total expenditure was £16,208 and the ordinary income was £14,034. On balance, £2600 having been transferred from the long-lived but now nearly exhausted maintenance fund, the charity was still in debt to the amount of £2335, and the convalescent fund was in debt to the extent of £164. 3875 patients had been treated in the wards, 20,434 as out-patients, and for redressing of wounds, &c., 52,082 had attended. The Lord Mayor (Dr. Richard Caton), in proposing the adoption of the report and accounts, said that he trusted that such charities as the Royal Infirmary would not, as some people thought, be placed upon the rates. The present method of hospital governance was infinitely better than anything that could take its place in the form of State-aided hospitals. He trusted that they would do everything in their power to carry on that and other hospitals on their present basis. He regretted to find that the committee was in debt as regarded the convalescent fund, as that was such an important matter which led to the relief of their bed accommodation. Mr. T. H Bickerton alluded to the question of the possibility of the renewal of the lease of the abattoirs in their present position near the infirmary. He expressed the hope that the corporation would not on any account consent to the renewal of the lease. The Liverpool Medical Institution had prepared a resolution to which some 200 to 250 medical men had attached their signatures, which would be sent to the Lord Mayor for presentation to the city council. He hoped that the city would confirm the opinion of the medical profession that abattoirs should not be allowed to remain in densely populated centres. Mr. G. G. Hamilton said that his operating theatre in the infirmary was only at a short distance from the abattoirs, and he joined in the hope that the lease would not be renewed. Several times he had had to stop surgical operations to get rid of flies which were now recognised as such a medium for spreading disease. If it were proved that the flies had a

breeding-place near the abattoirs it was a very serious thing to consider whether the abattoirs should be allowed to exist in their present situation.

The Preservation of Infant Life.

The large number of inquests held in a year by the city coroner on children fatally burned has stimulated interest in the preservation of infant life in the city. The matter was brought before the health committee at its recent meeting by Mr. W. B. Stoddart, one of the city councillors (the well-known Cambridge cricketer). In response to the representations made by Mr. Stoddart for the better care of the children generous aid has been offered to the infant life preservation sub-committee of the health committee by two ladies—Mrs. Clayton of Wavertree and Miss Gladys C. Whitley of Sefton Park. The former has promised £200 and the latter £50 for the purpose of purchasing fire-guards for distribution amongst the poorest classes. The gifts were thankfully accepted by the health committee.

Death-rate of Liverpool.

Owing to the ravages of influenza and the rate of mortality among aged people the death-rate of the city for the past week was 33·7 per 1000, compared with 19·8 a year ago. The medical officer of health informed the health committee on Jan. 30th that the present outbreak of influenza was the most severe since 1895.

Medical Appointments at Birkenhead.

Dr. R. Owen Morris has been appointed medical officer of council schools and Mr. R. S. Marsden (medical officer of health of the borough) has been appointed superintendent medical officer of schools.

Toxteth Park Vaccination Statistics.

The vaccination officer of the Toxteth board of guardians has presented the board with the vaccination statistics for the year 1906. There were in the township 4140 births; 3142 of the infants were successfully vaccinated, 17 were "insusceptible," 6 were exempted on the conscience clause, 448 died before being vaccinated, 71 cases of vaccination were postponed by medical certificate, 441 could not be traced, and 15 infants were removed to other districts.

Presentations to a Medical Officer of Health.

During an interval in the proceedings of the Bootle council at a recent meeting Mr. T. W. N. Barlow, who was for six years medical officer of health of Bootle and who left last month to fill a similar post under the Wallasey district council, was the recipient of two handsome presentations. The mayor, on behalf of last year's health committee, presented him with an illuminated address expressing its appreciation of his efficient services and the town clerk handed him a gold watch from his late fellow officials. Mr. Barlow feelingly acknowledged both presentations in appropriate terms.

Feb. 11th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Housing in Swansea.

THE success of the proposed cottage exhibition to be held in Swansea in 1909 has been assured by the election of a representative committee to carry out the necessary details. Delegates from all the sanitary authorities in South Wales have been placed upon the committee together with the local Members of Parliament and others. A site owned by the Swansea corporation will probably be made use of and in other ways the corporation is assisting the enterprise. For many years past the question of providing suitable houses for the working-classes has been under serious consideration not only by the Swansea town council but by most of the local authorities in the neighbourhood. Private enterprise has to a certain extent been able to meet the demand for cottages in the borough of Swansea where plans for as many as 458 houses were approved by the corporation in 1906.

Medical Inspection of Schools.

The Newport (Mon.) education authority has decided to appoint an assistant medical officer for the purpose of carrying out the medical inspection of the children attending the public elementary schools. The salary proposed is £225 per annum with periodical increases to £275. A suggestion that the work might be done by the general practitioners of the town did not meet with the approval of the authority.—The Barry education authority has decided to appoint a medical officer at a salary of £250 per annum. He will work in conjunction with the medical officer of health. The question of appointing a whole-time medical officer of health for Barry has been under discussion but the arrangement indicated has been finally decided upon.—At a meeting of the Torquay town council held on Feb. 6th it was decided to appoint a medical officer to carry out the medical examination of school children at a salary of £150 per annum, increasing to £210.

Isolation Hospitals in North Wales.

Mr. J. O. Williams, medical officer of health of Barmouth, North Wales, has received an offer from Mrs. Talbot, Tynyffynon, to contribute £100 towards the cost of erecting an isolation hospital provided that five other similar sums are promised. The committee which is making arrangements for the provision of an isolation hospital has appointed deputations to wait on those who are likely to support the movement. The question of providing an isolation hospital in the adjoining town of Dolgelly has been again discussed by the urban council without coming to a definite issue. The council has already decided to build a small hospital which would be easy of extension if occasion arose, but the members are not unanimous as to the necessity for the expenditure.

Infant Mortality in Bristol.

In common with the rest of England and Wales there has been a considerable fall in the rate of infant mortality during the past few years in Bristol. In a report which the medical officer of health (Dr. D. S. Davies) has recently presented to the city health committee he expresses the hope that by the appointment of health visitors a still further reduction may be made. Dr. Davies very properly warns the committee that too much must not be expected of special work in this direction. In justification of this warning he gives a comparative chart and comparative table for Bristol and Huddersfield, from which, he says, it is evident that the wholesale improvement in the Huddersfield infant mortality returns claimed as due to the special measures taken there is not proved by the figures adduced to be due either entirely or in any large degree to these measures, for a practically identical improvement has taken place during the same years in Bristol without any special methods to this end having been taken. In the three years 1905–06–07 during which special work against infant mortality has been in progress in Huddersfield, the infant mortality rate in that town has been reduced 18 per cent., when compared with the rate of the preceding ten years. In Bristol the reduction has been 15 per cent. In Huddersfield during 1907 the rate was 97 per 1000 births, in Bristol 101, and in the whole country 118.

Milk-supply in Monmouthshire.

At a recent meeting of the Monmouthshire Chamber of Agriculture a resolution was passed asking that any legislation concerning the milk-supply should provide for uniform regulations throughout the country; that no vexatious restrictions calculated to render the production of milk more expensive should be adopted; and that the working of any new Act should be entrusted to the Board of Agriculture and Fisheries rather than to the Local Government Board. One of the speakers at the meeting deprecated what he called the milk scare, for which he said there were not sufficient grounds. A commentary upon these remarks is to be found in the report of the medical officer of health of the Llanelly rural district in which he stated that he could not recommend the registration of certain dairies and cowsheds, and with regard to other cowsheds in the district they were most of them left in such a filthy condition that it was not possible to enter them for inspection purposes.

Feb. 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

AT a meeting of the board of managers of this institution on Feb. 3rd Dr. Alexander Bruce and Mr. F. M. Caird were reappointed (the former as pathologist and resident physician and the latter as surgeon) for a further period of five years;

and Dr. W. T. Ritchie, Mr. Henry Wade, and Dr. W. E. Carnegie Dickson were reappointed to the pathological department for one year. These latter appointments are carried on from year to year.

Edinburgh Royal Medical Society.

The annual dinner of this society was held on Feb. 5th, the chair being occupied by the senior president, Dr. A. C. B. McMurtrie. Mr. Jonathan Hutchinson was the guest of the evening. The toast of the guest was proposed by the chairman and in his reply the former advised the members to keep the dreams of youth before them and to increase their zeal in medical pursuits as life advanced. In proposing the toast of the society Mr. Hutchinson spoke of the unsatisfactory character of examinations and threw out some novel ideas as to how they might be improved. A number of invited guests had been unable to accept the invitation to be present owing to other engagements. In fact, this dinner clashed, unfortunately, with at least three other medical meetings.

Edinburgh Indian Students Association.

The annual dinner of this association was held on Feb. 6th. Lord Salvesen was the chief guest and in his hands was placed the toast of "India and the Edinburgh Indian Association." Several of the University professors were also present. The proceedings passed off most creditably to the student organisers.

Honour to Dr. J. O. Affleck.

Many of the old students of clinical medicine in the Edinburgh Royal Infirmary will be pleased to know that the University of Edinburgh is to confer on Dr. J. O. Affleck the honorary degree of LL.D.

The Vacant Regius Chairs in Edinburgh and Glasgow.

The filling of both the chair of clinical surgery in Edinburgh and of that of practice of medicine in Glasgow is in the hands of the Secretary for Scotland. With regard to the first of these there are several local applicants; indeed, all the members of the senior surgical staff in the infirmary and two or three outside surgeons are spoken of. With regard to the Glasgow chair it is understood that in addition to applicants from Glasgow there will probably be at least two or three from Edinburgh. There are, of course, many surmises but there is no trustworthy information.

The Royal Hospital for Sick Children, Glasgow.

The twenty-fifth annual report of this hospital has just been issued and forms very interesting reading. Three years after the hospital was opened the number of cases treated per annum was 300, now it is 11,000. Three years after the dispensary was opened the attendance there was 5000 per annum, now it is 11,000 per annum. The average daily number under treatment in the wards of the hospital during the past year was 67·1 and the average duration of residence was 23·83 days. The country branch at Drumchapel has proved a most valuable extension of the hospital. The wards there have always been full and many more than the regulation number of 26 cots could easily have been utilised. In connexion with the work at the dispensary, also, it is noted that the resident sisters and nurses visited at their own homes 431 cases which could not be taken to the dispensary. The ordinary income for the year was £6819, as compared with £6469 in the previous year. The ordinary expenditure was: hospital, £4995; country branch, £1497; and dispensary, £1369. This leaves a deficit of £1042. The report refers to the movement that has been inaugurated for the raising of money for the rebuilding of the hospital on a more suitable site, as, apart from the lack of accommodation in the hospital itself, the present site is now crowded with buildings, surrounded by high tenements, and is next door to a veterinary college where diseased animals are treated. The directors last year drew up a statement of the needs of the hospital and issued an appeal for £100,000 to enable them in the first place to build a hospital to contain from 200 to 250 cots on a site in Glasgow where the children will get the maximum of fresh air and sunshine, and secondly, to extend materially the hospital accommodation in the country. As a result of this appeal at the close of the year the subscriptions totalled £60,000, of which sum £4500 were raised by a "shilling fund" started by the proprietors of the *Glasgow Evening News*. At the present time the directors are negotiating for a suitable site.

Interesting "Milk" Prosecutions.

In view of the present outbreak of enteric fever in Glasgow and Partick two interesting prosecutions took place in Partick police-court recently. The accused were both dairymen in the burgh and the charge against them was that of allowing the message boys on their respective milk carts to sit upon vessels used for the purpose of carrying milk. This constitutes a contravention of a section of the burgh regulations, which is to the effect that no person should rest his body on vessels used for holding milk. The defence in both cases was that the vessels were empty at the time and would have been scalded before being used again. In both cases it was held that the by-law had been contravened, but the defendants were dismissed with an admonition.

Dumfries and Galloway Infirmary.

The report for the past year states that 788 in-patients were dealt with, which constituted a record for the hospital. The ordinary income amounted to £3419 and the ordinary expenditure to £4216, showing a deficiency of £967, but, on the other hand, legacies were received during the year to the extent of £3000. At the annual meeting a protracted discussion took place with regard to a complaint that a patient had been sent into the hospital and carried from the ambulance to the operating theatre where he was operated on without any diagnosis and that he died in consequence. It was decided that there was no ground for complaint.

The Epidemic of Enteric Fever at Peterhead: Professor M. Hay's Report.

On Feb. 3rd, at a meeting of the Peterhead town council, Professor Hay's report on the epidemic of enteric fever was considered. The report is of considerable length and deals largely with the rise and spread of the epidemic. He notes at the outset that the situation of Peterhead, built on a headland with a considerable slope seaward, is favourable to a good system of drainage; but some of the drains are of the old-fashioned rubble-built type, and some of them are carried along streets parallel to the shore, thus losing the necessary slope that would render them self-cleansing. Also, while the newer buildings are provided with modern and efficient sanitary arrangements, many of the older houses have antiquated and even dangerous drainage arrangements and prove the need of the more strenuous enforcement of the Public Health Act. As regards the outlet of the town's sewage, the principal sewer south of the harbour does not seem to be carried sufficiently far out to sea, as there is a strong and nauseating odour in its vicinity. With regard to the water-supply Professor Hay remarks that, both from the inspection of the wells or springs and from chemical and bacteriological examination, the water was largely of the order of ordinary field-drain or subsoil water; also that at the beginning of the epidemic the water was open at many points to pollution. Much of the water was surface water from cultivated fields liable to manuring and there was no provision for filtering it. This danger was increased by the use of the town's refuse as manure. On Professor Hay's recommendation the sale of all refuse for manure was stopped to farms within the water-gathering areas and to dairy farms. With regard to the origin of the epidemic Professor Hay is of opinion that it was started by milk infection which planted a large number of cases throughout the town and that it was kept going mainly, if not wholly, through contact infection. The cases occurring in spots or patches favour this view, in contra-distinction to cases occurring in diffused areas, as would have been the case had the epidemic been started by water infection. He then proceeds to show that the further progress of the epidemic and the distribution of the cases were against the supposition that the water became infected, at least to any degree. He does not, however, defend the state of the water-supply which he thinks bad and in pressing need of reform. He afterwards goes on to specify what ought to be done to prevent a recrudescence, such as promptly notifying suspicious cases, having recourse to the Widal and other blood tests in obscure cases, examining any old cases with any suspicion of infectivity, getting rid of all obsolete and insanitary arrangements such as ashpits, and the stoppage of supplying domestic or ashpit refuse to dairy farms or farms within the gathering grounds of the water-supply for a year or two until enteric fever shall be stamped out.

Feb. 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Emigration from Ireland.

IT is deplorable to record that during the first month of this year 641 people (378 males and 263 females) emigrated from Ireland. Of the total, 360 were from Ulster (showing a decrease of 32 as compared with the same month last year), 131 from Leinster (a decrease of 38), 117 from Munster (an increase of 16), and 33 from Connaught (an increase of 2). The destinations of these emigrants were as follows: 256 went to the United States, 272 to Great Britain, 48 to Canada, 37 to Australia, 11 to South Africa, 6 to New Zealand, and 11 to other countries. The steerage passengers to the United States numbered 219, of whom 44 had their passages paid in America. The public health conditions of Ireland certainly play their part in this progressive depopulation of the country, a fact which should be borne in mind by those who too readily attribute every ill in Ireland to political troubles.

Opening of the Tuberculosis Exhibition at Banbridge.

On Saturday, Feb. 8th, the Countess of Aberdeen journeyed from Dublin to Banbridge, county Down, to open the Tuberculosis Exhibition which is being held there. In the Temperance Hall, where the exhibition is located, lectures were given by Her Excellency, by Mr. R. Martin (medical officer of health of Banbridge), Dr. W. Chancellor, and others. In the evening Sir John Byers gave the opening lecture on "What We May Observe in the Tuberculosis Exhibition." The subsequent lecturers were the Registrar-General (Sir Robert Matheson), Professor E. J. McWeeney, Dr. W. Calwell, Dr. H. L. McKisack, and Dr. R. T. Herron.

The Lady Superintendent of the Belfast Workhouse.

The Local Government Board has refused to approve of the appointment of a lady elected by the Belfast board of guardians as lady superintendent of the workhouse and training school for nurses, having regard to the deliberate statements of the visiting medical officers and to the fact that, in the opinion of the Local Government Board, she does not possess the necessary personal qualifications for the office. Accordingly it recommended the guardians to proceed to another election. In reply, the guardians have requested the Local Government Board to sanction the appointment for a probationary period of six months. The Local Government Board has written refusing to sanction such an appointment on probation and advised the Belfast guardians again to proceed to a new appointment, but at their weekly meeting on Jan. 28th the guardians, by 17 votes to 15, decided that the letter of the Local Government Board should be sent to a committee (which was subsequently appointed) with instructions to reply to it and to advance reasons in favour of the appointment.

Feb. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Risks of Arsenic in Agriculture.

AT a meeting of the Academy of Medicine held on Jan. 28th M. Cazeneuve called the attention of his audience to a situation which has become extremely alarming. Within the last two or three years enormous quantities of arsenic have been used in agricultural operations. The employment of this poison by the vine-growers is no new thing in France, for it was suggested some 12 years ago as a means of combating insect pests, but its use has greatly increased in recent years. By far the greater part of the arsenic employed comes from a Spanish mining district. In 1901 this district supplied 120 tons of arsenical ores, while in 1905 the quantity necessary for agricultural needs had risen to 4810 tons. Arsenic is not only employed in viticulture but also used for diseases of olives, and various instances of fatal poisoning have occurred in animals that have fed under the olive trees. At the conclusion of his address M. Cazeneuve asked the Academy to point out the dangers which might arise from the indiscriminate use of arsenic.

Immediate Operation in Gunshot Wounds of the Auditory Region.

At a meeting of the Paris Hospitals Internes' Society held on Jan. 23rd M. Wicart insisted on the necessity for immediate operation in gunshot wounds of the auditory region. He based his remarks upon many cases which he had seen and on one in particular where radiography had not revealed the site of the ball which in consequence had not been extracted. Chronic suppuration set in, facial paralysis became incurable, and labyrinthine trouble persisted. The best route to follow for extractions was the retro-auricular, and the clearing out of the petro-mastoid cavity would be found to be of great assistance.[1]

The Treatment of Old-standing Injuries of the Wrist by Total Resection of the Carpus.

At a meeting of the Surgical Society held on Jan. 29th M. Valas read a paper on this subject. He said that traumatic lesions of the wrist in which efforts at reduction have failed are often capable of being greatly improved by immediate operation and sometimes even by massage alone; when, however, the lesions are of old standing, whether on account of having been overlooked or because immediate treatment has failed, they cause such inconvenience that the patient is always anxious that something should be done to help him. The majority of surgeons content themselves with removing the dislocated or fractured bones, but this method of operating generally means that successive operations have to be performed until all the carpal bones have been taken away. M. Valas therefore considers it better to remove the whole carpus at one sitting. In six cases which he has treated in this way he has obtained excellent results; in all these cases the carpal lesion was at least four months old and all the patients recovered complete movement of the hand. M. Valas concluded by saying that he thought that complete resection of the wrist was an excellent plan to adopt in such cases as he had described.

Feb. 11th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Treatment of Bronchiectasis.

Professor Koerte recently read a paper before the Berlin Medical Society on Operations for Bronchiectasis. He pointed out the difficulty of surgical intervention because in bronchiectasis a great number of cavities without a direct communication are usually present. The diagnosis was also very difficult, especially as regards the difference between bronchiectasis and gangrene of the lung. The operations for pulmonary gangrene gave, as a rule, better results than operations for bronchiectasis, for Professor Koerte has lost only eight out of 28 patients operated on for gangrene, as compared with 11 deaths in 15 operations for bronchiectasis. The only cases suitable for operation were those in which the bronchiectasis was limited to one lobe of a lung. A resection of at least two ribs was essential to make the lung accessible. After the lung was incised each bronchiectasis must individually be opened, tied, and plugged. If the cavity did not collapse after the operation an extensive resection must be carried out. The dangers of the operation consisted in the profuse hæmorrhage and in the shock which might occur at the moment of the incision. He did not use Sauerbruch's chamber for the operation but he avoided pneumothorax by drawing the lung quickly into the wound. The early cases gave the best results but they, of course, very seldom presented themselves for surgical treatment.

Diabetes Conjugalis.

At a recent meeting of the Berlin Medical Society Professor Senator discussed the question whether diabetes might be communicated from husband to wife and *vice versâ*. He said that some writers, believing that the disease can be so communicated, have proposed the name of "diabetes conjugalis" for this condition. Dr. Schmitz of Neuenahr had found 26 married couples among 2320 diabetic patients, being 1·1 per cent. of the total number. The computation ought, however, to be made not by comparing the diabetic couples with the total diabetics, but by comparing the diabetic couples with the diabetic patients who were either married or lived connubially. The proportion of diabetic

[1] See THE LANCET of Nov. 3rd, 1907, p. 1577, for an account of a paper on the same subject by M. Sebileau.

couples then becomes higher. Professor Senator has observed 516 married couples of whom either the husband or the wife, or both, were diabetic. The latter event happened in 18 instances (i.e., 3·5 per cent.), and taking only those couples who had been married from six months to one year the proportion rose to 4·1 per cent. Some of the cases were hereditary, but even 4·1 per cent. was not a proportion sufficiently high to make a communication likely. Some rather striking instances of communication have, however, been recorded, such as that of a washerwoman who had washed the linen of diabetic patients and that of a surgeon who had performed an amputation on a diabetic patient. Some pathologists have produced diabetes in animals by the inoculation of diabetic urine; experiments of this kind which Professor Senator had made were unsuccessful, but he nevertheless was of opinion that a communication of the disease might happen in certain favourable circumstances. In the discussion Dr. Neumann said that among 108 diabetic patients whom he had observed there was only one married couple. Dr. Albu said that he had found diabetes in two married couples, but in one of them the disease was hereditary and in the other it was caused by cancer of the pancreas. Professor Ewald said that in 120 cases he had not seen a single instance of diabetes conjugalis.

The Congress of Internal Medicine.

The Twenty-eighth Congress of Internal Medicine will meet this year in Vienna from April 6th to 9th, Professor Müller of Munich being in the chair. The official subjects of discussion will be as follows: (1) the Relations between the Genital Organs of Women and Internal Diseases, to be introduced by Professor von Rosthorn of Heidelberg and Dr. Lenhartz of Hamburg; and (2) New Methods of Examining the Function of the Intestines, to be introduced by Professor Schmidt of Halle. The other addresses the titles of which have been announced include one on the Present State of the Pathology and Treatment of Syphilis by Professor Neisser of Breslau and one on the Quantity and the Distribution of the Blood in Anæmia by Dr. Morawitz of Heidelberg. Visitors wishing to take part in the proceedings should make application to the general secretary, Dr. Pfeiffer of Wiesbaden.

Precocious Menstruation.

Professor Stoeltzner of Halle has described in the *Medicinische Klinik* the case of a child who began to menstruate when in her second year. She was two years and ten months old and had menstruated several times, the intervals being at first eight weeks and afterwards five weeks. She had well-developed mammæ and a large vulva. Her height was 102 centimetres and her weight was 19·5 kilogrammes, which corresponded to the weight of a child aged from five to six years. She was originally quite normal and at birth weighed 3·2 kilogrammes. She had her first tooth when six months old and could walk at the age of one year and two months. Precocious puberty has been described by some writers as a symptom of a morbid condition of other organs, such as malignant adenoma of a suprarenal gland or intracranial disease. In cases where precocious puberty was associated with menstruation a pathological condition of the ovaries was very likely to exist. Ovules were discharged as in normal menstruation and such children have been known to become pregnant. Children who presented this abnormality ought to be kept under observation, as malignant growths might develop in the ovaries.

The Serum Treatment of Scarlet Fever.

Dr. Pulawski of Radziejov, writing in the *Deutsche Medizinische Wochenschrift*, reports the results obtained in scarlet fever by the subcutaneous injection of serum which was produced by the inoculation of horses with streptococci cultivated from the blood of severe cases of scarlet fever. Of 35 severe cases treated with this serum 28 per cent. died, whereas of 28 severe cases treated without the serum 71 per cent. died. The serum proved to be quite innocuous and did not cause any undesirable symptom beyond a slight urticaria. Among the patients treated with serum there were ten deaths; these cases had, however, from the first been regarded as hopeless. In the remaining cases favourable action of the serum was shown by the rapid development and shortened duration of the exanthem, by mitigation of the grave symptoms, and by a quicker convalescence. It is probable that the serum protects the patients against complications such as otitis, lymphadenitis, and nephritis. In two cases complicated by diphtheria the joint administration of scarlet fever serum and diphtheria serum was useful.

Feb. 10th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"La Ginecologia Moderna."

ITALIANS, according to Italy's greatest composer Rossini, owe a debt of gratitude to Spain, "which saves them from being ranked as the most backward of European nationalities." True in the main, the remark is specially true in medical literature, particularly medical journalism, in which all that can be said of Italy is that she is rather better than her Iberian sister. It is *pro tanto* the more gratifying, therefore, when a new accession to Italian periodicals is announced with the programme and the promise of *La Ginecologia Moderna* (*Modern Gynæcology*), the monthly review just started at Genoa under the competent editorship of Dr. Luigi Maria Bossi, professor of obstetrics and the propædeutics of gynæcology in that school. Not only does the new periodical deal with the medico-chirurgical questions to which the ailments of the female sex give birth, but it takes cognisance of the more general problems arising out of the psychological, the sociological, and the forensic aspects of that group of diseases. A novel feature of the journal will be the attention given to "female criminology," in which the phenomena of hysteria play a part becoming steadily more conspicuous from what a sociologist has called "the hyperæsthesia of our over-wrought civilisation." Among the contributors to the subject appear Dr. Cesare Lombroso of Turin and Professor Enrico Ferri of Rome. No reader of contemporary *causes célèbres* can fail to recognise in this department of *La Ginecologia Moderna* a most interesting field of observation and discussion.

Pharmaceutical Misadventure.

I had occasion recently to note the tragic consequences of the irregular prescription and administration of cod-liver oil with solution of phosphorus. Another case of misadventure is just reported from Codogno in the neighbourhood of Cremona, where a peasant woman was "treated" by a local pharmacist and died a few hours afterwards—a white powder (the nature of which has yet to be specified) having been given by mistake for magnesia. The pharmacist is now in prison and the matter, of course, *sub judice*. Meanwhile the case reinforces the warning addressed to all Italians (and others outside Italy) that, unless professionally prescribed and exhibited, medicines are fraught with danger—often death—to the consumer. I may add that Italian pharmacists are memorialising the Minister of Public Instruction (His Excellency Signor Rava), while maintaining the stringency of the gateway to the profession, to vouchsafe in consideration of the severe ordeal thus exacted the title of Doctor to the successful examinee. Certainly the claim is not an extravagant one, when the veterinary surgeon and the graduate in "zooiatria" can, after due examination, call himself "Doctor." The memorialists, however, do not strengthen their cause by the threat—all too common in Italian Universities—to refuse to attend the classes till their petition is granted. While at that end of the pharmaceutical ladder the aspirant is agitating for fuller rights, at the opposite end there is another movement much less to be encouraged—that is, to recognise as fully qualified for the practice of pharmacy those "assistants" who, without having passed an examination, have completed a certain number of years of apprenticeship. No doubt there are among these petitioners not a few highly expert and capable pharmacists, but to make all of them eligible for the rights which only the State diploma can confer would be to establish a dangerous precedent.

The National Institute of Physical Education.

True to the watchword of Cavour's successor, Massimo d'Azeglio, given forth just 40 years ago—"We have made Italy. Let us now make Italians"—the promoters of the physical rehabilitation of the "pubes Italica" are sparing no effort to diffuse and to intensify their salutary propaganda. At Rome in May next they will hold their first "Riunione," and the occasion will be signalised by the carrying out of a programme of gymnastic exercises, games, and other tests of physical development, agility, and strength, in which all the clubs of Italy, organised with that object, will be fully represented. Every facility will be offered to the public, domestic and foreign, to intervene at the "spettacolo"—railway transit being, for one thing, reduced 75 per cent. in cost to all who send in their names as intending visitors to the president, Signor Lucchini, Member of the Chamber of

Deputies. Those of the profession in the British Isles who can take their holiday during the month of May—always delightful in Italy—might do worse than honour the "Riunione" with their presence.

Feb. 10th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Water-supply of Medina.

ON previous occasions[1] I have given some accounts of the recent measures undertaken to supply Mecca with drinkable water. The sister city Medina, quite or nearly as sacred to Islam as Mecca, on the good water-supply of which many thousands of Moslem pilgrims so much depend, is also soon to receive proper canalisation works and every other requisite for a large and satisfactory provision of pure water. The Sultan has already given the necessary orders to proceed, with as little delay as possible, with the construction of these canalisation works. There is, I understand, a copious supply of water conducted from a tepid source at the village of Kuba, two miles south of Medina, and distributed in underground cisterns in each quarter. Besides, a number of torrent courses (of which the Kanat to the north, at the foot of Mount Ohod, and Akik, some miles to the south, are the most important) descend from the mountains, forming considerable streams and pools after rain. These torrent courses, which converge in the neighbourhood of the city at a place called Zaghaba, make the whole district for many miles around one of the best watered spots in Northern Arabia. There is also underground water which can be reached by sinking deep wells, but many of these wells are brackish and quite useless for drinking purposes. Through the suburbs of Medina, which are the quarters of the peasants, runs the watercourse of the Batan, a tributary of the Kanat. All these water sources have been used for many centuries for drinking and cooking purposes. As some of the wells are of considerable depth the so-called "sakkas" (water carriers) descend into them with the help of ladders and after filling their "courbas" (leather bags) with water distribute it to the various houses. Seeing that these wells and other sources are quite open to all sorts of pollution and contamination, this mode of supplying water to the inhabitants of Medina left much to be wished for. The population continually suffered from different gastric troubles and infectious diseases, such as enteric fever, which have naturally been attributed to the contamination of the water. The water to be canalised is that of Zerka, or Aini Zerka. It will be conducted into two great reservoirs of 2000 cubic metres capacity. From these reservoirs the water will be conveyed into smaller reservoirs and fountains to be erected at different places in the city. All the works of canalisation will be constructed under the direction of a special commission. The way in which wells are dug at Medina is interesting. First a well is opened at a high elevation, then another lower down, a third still lower, and so on. Afterwards all these wells, from the highest to the lowest, are connected by subterranean channels. In this manner the water is brought to a plane whence it is conveyed to different points of the city and its suburbs. Often the inhabitants united of their own accord to execute these works. The two above-mentioned great reservoirs will be constructed upon the place called Menahe situated in the north of Medina.

Feb. 7th.

NOTES FROM PEKING.

(FROM OUR OWN CORRESPONDENT.)

The Opium Question.

IN spite of all that has passed on the subject of opium in China, from Imperial edicts against the trade down to missionary and lay protests, the question still remains in a most unsettled and unsatisfactory condition. A new phase has recently been entered upon by the action of the Viceroy of Nanking who proposes to establish a Government monopoly in the opium business in his capital, a step that would no doubt be extended to other parts of the province if successful in Nanking. This has caused a strong protest from the British firms concerned in the foreign opium trade who feel their business would be injured unjustly, as it is not a matter concerning the use of opium but merely of diverting it into Chinese hands, thus infringing established treaty rights. The Hong-Kong Chamber of Commerce has taken the matter in hand and is upholding the merchants' appeal to the Governor to see that the monopoly is not allowed. There is evidence to prove that the sale of anti-opium pills (containing a percentage of opium) and morphine is increasing. While the foreign importation of opium is decreasing the area under poppy cultivation is being extended and the native article is also improving in quality. Those of us who have an opportunity of judging can see little if any diminution in the number of Chinese addicted to the habit, though certain high officials have found themselves compelled to give it up. In the meantime one may rest content that the British and Chinese Governments are taking a right view of the whole matter, especially in the light of the recent agreements that there is to be a gradual diminution of the Indian opium trade *pari passu* with the decrease in the production of the native drug. This will not content the extremists among the anti-opium advocates but the moderates will realise that a sound incentive is given to China to make serious efforts to diminish her own output.

Climate and Health.

During the winter months (October to February inclusive) there is a great diminution of bacterial diseases. In the absence of sanitary regulations the public health may be looked upon as very good. With the exception of sporadic cases of small-pox all zymotic diseases die down and the chief complaints among hospital patients are rheumatism, neuralgia, bronchitis, and conjunctivitis, the two last being mostly due to noxious fumes of anthracite stoves in houses which have no chimneys. Not infrequently one meets with cases of gangrene of the toes in the old and poor and a curious feature is the large number of workmen out-patients who suffer from septic inflammation of the hands due to cracks and fissures in callosities through which dirt enters. A good many Europeans also suffer from fissures at the points of the fingers due to the extreme dryness of the atmosphere and low temperature which at present ranges from 10° F. at night to 32° by day. The prevailing wind is north and north-west and as it comes from over the steppes of Siberia and Mongolia it is bitterly cold and sometimes accompanied by clouds of fine dust. The sky is, as a rule, cloudless and the sun often genially warm, so that one may look upon the winter climate of North China as being on the whole a very healthy one. With the exception of occasional visits of influenza (from one of which we are now suffering) the European population enjoys good health. Children thrive well and there is no need here for that separation from their parents which has been found necessary in South China and India; indeed, there are a good many European adults in North China who have never been home and yet are sound healthy specimens of manhood. Fog or mist is unknown. Notwithstanding the healthiness of the climate the tuberculous rate suffers little diminution and still awaits the time when Chinese "enlightenment," which is so much talked about at present, reaches that stage when public health regulations will be found necessary to deal with the high mortality rate in this disease.

Small-pox.

The beginning of every winter sees a recrudescence of this disease and it is generally supposed that the removal by the Chinese of their winter clothes from the pawnshops has much to do with the annual visitation. These garments consist of two layers of cotton between which is a thick layer of cotton-wool. Though in North China inoculation is still practised to some extent it has been of late years supplemented by calf lymph, a good supply of which has been imported from Japan. Here and there throughout Peking are Government vaccination stations where those who care to submit themselves can be vaccinated without any regard to asepsis. An increasing number are availing themselves of the facilities offered. It is not an uncommon sight to see blind men with deeply pock-marked faces feeling their way through the streets.

Adulteration of Milk.

In the absence of any legislation against adulteration (except in a foreign settlement such as Shanghai where there

[1] THE LANCET, August 4th and Nov. 3rd, 1906.

are municipal health regulations on a par with those of any town in England) it can be carried to a fine art. Milk-sellers, for example, are as a rule unable to refrain from watering their milk and this is accepted by the foreign community (as they and not the Chinese are milk-drinkers) as so inevitable that the chief growl is about the quality of the water more than the quantity of it. Some Chinese dairymen, however, carry the adulteration to a high pitch of excellence and add a yellow-coloured emulsion of beef tallow to liberally watered milk. When this emulsion dissolves out it rises as a rich thick cream, out of which butter can be made. If some of this cream be added to boiling water the tallow congeals on cooling—a rough-and-ready test which is but rarely employed.

Jan. 8th.

Obituary.

WILLIAM ALLINGHAM, F.R.C.S. ENG.,

CONSULTING SURGEON TO THE GREAT NORTHERN CENTRAL HOSPITAL.

THE death of Mr. William Allingham, which we have already announced as having taken place at Worthing on Feb. 4th, was not unexpected, for his health had been very unsatisfactory for some time, while he had reached the advanced age of 78 years.

William Allingham was born in 1829 and received his early education with architecture as its object. He studied his art at University College, London, took several students' prizes in the subject, and later, while practising his first profession, exhibited studies at the exhibitions of the Royal Academy and obtained an honourable mention for a design which he submitted for a building to house the Great Exhibition of 1851. In this same year, however, he decided to abandon his profession and turned to medicine, which had always attracted him. He entered as a student at St. Thomas's Hospital and had a successful career, taking prizes in anatomy, systematic and clinical medicine, and the Treasurer's prize—in fact, he secured most of the rewards that fall to the lot of the able and energetic student. In 1855 he became a Member of the Royal College of Surgeons, proceeding to the Fellowship two years later, while between the taking of his pass and honour diploma he had the valuable and honourable experience of serving as surgeon in the Crimean war. He volunteered as soon as he was qualified and reached the seat of war, which was then in progress, in time to be present at the siege of Sebastopol and to see a vast amount of practical surgery in the most arduous circumstances at the hospitals at Scutari. During a large part of his war services he was attached to the French army, which was extremely badly provided with surgical aid, and there is no doubt that under the strenuous nature of the duties which devolved upon him Allingham gained the courage and sense of responsibility which marked him out as a successful operating surgeon from the beginning of his career. On his return he was for a time surgical tutor and demonstrator of anatomy and later surgical registrar at St. Thomas's Hospital, and in 1863 he commenced practice as a consulting surgeon in Finsbury-square, then a very favourite centre for consulting practice. In a very short time he became known as a specialist in diseases of the rectum, and in 1873 he published his well-known book on that subject. This book went through five editions, the last one appearing in 1888; it was translated into several foreign languages and was accepted generally as an authoritative and inclusive work, though several surgeons differed from the author on points of operative procedure and technique. The work took final shape in 1901 when Herbert Allingham, William Allingham's eldest son, collaborated with his father in an edition so thoroughly revised as to be practically rewritten.

As he became more successful Allingham, following the example of other well-known consultants, transferred his practice from Finsbury-square to Grosvenor-street, and during the whole of the later period of his professional career he enjoyed a large practice as a consulting surgeon in cases of diseases of the rectum. He came to be regarded as one of the first authorities on the subject as well as one of the most skilful operators where surgical measures had to be taken. Although he was never on the honorary staff of one of the great metropolitan hospitals possessing a medical school, he was for many years surgeon to the Great Northern Central Hospital and to St. Mark's Hospital for Fistula and Diseases of the Rectum, while he was also consulting surgeon to the Farringdon General Dispensary and to the Surgical Aid Society, with the founding of which society in 1862 he was intimately connected. In 1884 he was elected on the Council of the Royal College of Surgeons of England. He retired from practice in 1894.

Allingham, who was widely known in private life as a most kindly, generous man, an excellent host, and a sympathetic friend, was twice married. His first wife was Miss Christiana Hooke, by whom he had six children, the eldest son being Herbert Allingham, the brilliant young surgeon whose untimely death will be fresh in the memory of our readers; while both his daughters married medical men, the elder, now Mrs. Chevallier Tayler, the wife of the well-known artist, having married first Mr. Charles Cotes whose memory as a surgical tutor is still preserved among St. George's men; while the younger is the wife of Mr. Claud E. Woakes. Allingham married secondly Miss D. H. Hayles who predeceased him last year and by whom he had no children.

HERMANN SNELLEN, M.D.,

PROFESSOR OF OPHTHALMOLOGY, UNIVERSITY OF UTRECHT.

THE death of Professor Snellen of Utrecht removes another of the few remaining links with the founders of modern ophthalmology. The seed sown by Donders, von Graefe, and von Helmholtz fell upon fertile soil and was worthily tended by illustrious disciples. The mantle of Donders fell upon Snellen who has borne it nobly through a long and strenuous career.

Hermann Snellen was born in 1834, the son of Dr. F. A. Snellen, a well-known physician. He studied at Utrecht, where he remained as student and professor throughout his life. His graduation thesis presented in 1857 gave ample evidence of his perseverance and skill in original research and of that scientific imagination which can alone guide research into fruitful paths. It was published in Virchow's *Archiv* in 1858 and dealt with neuroparalytic keratitis. In attacking this subject Snellen was entering the lists with those whose names were most famous in physiology, such as Magendie, Claude Bernard, Kühne, Gaule, Schiff, and others. He was led by his experiments to bring forward the simplest theory which could be held to explain the condition. He regarded neuroparalytic keratitis as a purely traumatic condition, the severity of which was due to the anæsthesia of the cornea, whereby slight injuries, such as those caused by foreign bodies, failed to set in motion those reflex acts which are nature's method of relief. The theory brought into prominence factors which had been overlooked or under-estimated by his predecessors and if it cannot be credited as a complete solution of the problem it was a stride towards that solution which after 50 years' interval we still await. In 1862 Snellen was appointed lecturer in ophthalmology and surgeon to the Dutch Hospital for Diseases of the Eye at Utrecht. In the same year he published those test types which have since been employed universally. Test types had already been devised by Küchler (1843), Jaeger (1854), Stellwag von Carion (1855), and others, but it was not until 1862 that they were devised upon a scientific basis simultaneously and independently by Snellen and Giraud-Teulon at an ophthalmic congress in Paris. The basis was a visual angle of one minute and Snellen's types are constructed on the principle that each letter subtends a visual angle of five minutes at the nodal point of the eye when placed at the given distance from the eye, whilst the breadth of the individual lines which compose the letter subtends an angle of one minute at the nodal point. Innumerable varieties of test types have since been brought forward, but the fundamental principle, being founded upon accurate physiological data, is universally maintained. Snellen's test types for near vision, constructed upon the same lines, have not found the same favour as his distant types, for in the circumstances in which they are employed other factors which tend to vitiate their accuracy come into play.

Though doubtless influenced greatly by his master Donders and by that mathematical instinct which is strongly developed in so many Dutch men of science, Snellen did not confine his attention to optics. He devoted much time and thought to the relief of deformities of the lids, and "Snellen's sutures" are familiar to every ophthalmologist to-day. Indeed, he made his mark in every department of ophthalmology. For many years he was associated with Leber, who

occupies a similar position with regard to von Graefe that Snellen does to Donders, and others in editing the chief German ophthalmic journal, von Graefe's *Archiv für Ophthalmologie*. Many of his original communications are contained in that journal. With Professor Landolt he is responsible for the article upon Ophthalmometrology in the first edition of the "Graefe-Saemisch Handbuch der gesammten Augenheilkunde." He wrote the chapter on the Methods of Determining the Acuity of Vision in "Norris and Oliver's System of Diseases of the Eye," an essay on the Development of our Knowledge of Glaucoma in the *Ophthalmic Review* (1881), &c. Snellen was appointed to the chair of ophthalmology in the University of Utrecht in 1877; he resigned in 1899, when he was succeeded by his son Hermann Snellen, junior.

We are indebted to Mr. E. Nettleship for the following remarks: "I first saw Snellen about 1872 or 1873 when he was in London; I was curator of the Moorfields Museum, only just commencing ophthalmic work, and beyond a general impression that he was a learned but very accessible man nothing remains. In the early 'eighties' I went to Holland for a short time, taking Utrecht first, and well remember the warmth and cordiality with which my wife and I were received at his house and that of Professor Donders, to whom he introduced us. Snellen paid frequent visits to Great Britain; he spoke English fluently and was a genuine admirer of many things English. He was intensely national in spirit and expressed the strongest dislike to the possibility of his country being absorbed into the German Empire. Snellen was a most genial, kindly, warm-hearted man, of the simplest habits, and intensely fond of his large family. He was a striking personality—large-framed, tall, with handsome features, and especially fine eyes, which though usually mild in expression could show animation and intense fire on occasion. Of placid temper, he had the gift of never fussing or seeming hurried, but of never being too late, and he carried his quiet energy and methodical thoroughness into his professional work. His operative manner and method were, I thought, equal to the best, although I remember thinking his desire for improvement sometimes led him to try new modes, especially of dressing after operation, rather readily, and always to think the newest plan the best."

ROBERT BIRCH, L.R.C.P. LOND., M.R.C.S. ENG., L.S.A.

Mr. Robert Birch of Newbury, who died on Jan. 24th, was formerly one of the principal practitioners in the town, but the state of his health unfortunately compelled him to relinquish active work some years ago and he had for a long time been a confirmed invalid. He was born in 1850 at Lichfield in Staffordshire, where his father was a solicitor. He studied medicine at King's College and was admitted a Licentiate of the Society of Apothecaries in 1871; in 1873 he took the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. He went to Newbury in 1876 and entered into partnership with the late Dr. Ryott. When the Newbury district hospital was established in 1885 he joined the medical staff, and on resigning his position in 1898 on the ground of ill-health he was elected one of the consulting medical officers. He was for a time a member of the Newbury town council and filled several other offices of local importance, having been a commissioner of taxes and librarian of the literary and scientific institution. He was one of the founders of the Newbury and District Medical Society, of which he was afterwards honorary secretary and president. Mr. Birch was married in 1882, and besides a widow he has left four sons and one daughter. The body was cremated at Woking on Jan. 25th.

FREDERICK MORITZ SYKES, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

THE death of Mr. Frederick Moritz Sykes occurred after a short illness at his residence, the Manor House, Bridlington, on Feb. 7th. The deceased, who was a native of Clitheroe, studied at Edinburgh, and after qualifying there and also obtaining the Licence of the Glasgow Faculty made a voyage to the Amazon. In 1894 he went to Bridlington where he entered into partnership with Dr. T. Thompson, with whom he carried on a very extensive practice up to 1900, when his partner left the town in consequence of failing health. Thereafter, Mr. Sykes undertook the entire conduct of the practice alone. He was a member of the honorary medical staff of the Lloyd Hospital. From the first he was exceedingly popular and was held in great esteem by all classes of the community.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. G. Levy, formerly physician of the Civil Hospital of Strasburg.—Dr. T. Lemberger, *privat-docent* of pharmacology in the University of Cracow.

Medical News.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS.—At examinations held in February for the Diploma in Public Health the following candidates were successful:—

Martha Adams, M.B. Glasg.; Robert Muschamp, L.R.C.P. & S. Edin.; and John James Scanlan, L.R.C.P. & S. Edin.

APOTHECARIES' HALL OF IRELAND.—At a special meeting of the court held on Feb. 3rd the following candidates having passed the necessary examinations were admitted Licentiates in Medicine, Surgery, Midwifery, and Pharmacy of the Apothecaries' Hall of Ireland:—

Synott Valentine O'Connor and John Hargreaves Robinson.

FOREIGN UNIVERSITY INTELLIGENCE.—*Budapest:* Dr. Frans Pcór has been recognised as *privat-docent* of Dermatology and Dr. Kornél Scholtz as *privat-docent* of Ophthalmology.—*Heidelberg:* Dr. Carl Menge of Erlangen has been appointed Professor of Midwifery and Gynæcology in succession to Professor von Rosthorn.—*Kieff:* Dr. F. Stefanis, Extraordinary Professor of Anatomy, has been appointed Ordinary Professor.—*Philadelphia:* Dr. B. F. Stahl has been appointed Professor of Medicine and Dr. M. B. Hartzell Professor of Dermatology in the Woman's Medical College of Pennsylvania, and Dr. J. H. Gibbon Professor of Surgery in the Jefferson Medical College.—*Pisa:* Dr. G. Gonella of Cagliari has been appointed to the chair of Ophthalmology.—*Toronto:* Dr. Charles K. Clarke has been appointed to the chair of Psychiatry.

LITERARY INTELLIGENCE.—The Oxford University Press will publish immediately the Fitz Patrick lectures delivered before the Royal College of Physicians of London by Dr. Norman Moore, under the title "The History of the Study of Medicine in the British Isles." The volume contains numerous illustrations.

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH AT BUXTON.—A congress of the Royal Institution of Public Health will take place at Buxton from July 18th to 24th under the presidency of the Right Honourable Victor Cavendish, M.P. An exhibition of medical and sanitary equipments, appliances relating to school hygiene, and gas, water, and electrical apparatus will be held in the fine corridor of the Buxton Pavilion (352 feet long), and will be open to the public. The honorary secretaries of the exhibition are Mr. J. W. Souden and Mr. W. J. Leeming, Electricity Works, Buxton.

UNREGISTERED DENTISTS.—At a meeting recently held at Torquay of the registered dental practitioners of Torquay and Paignton the following motion was carried:—

That in view of the rapidly increasing number of unregistered persons practising dentistry and evading the Dental Act of 1878, we appeal to all registered dental surgeons throughout the country to use their utmost endeavour by local combination to assist the authorities in taking steps to amend the Act and whenever possible to bring forward cases to enable them to take action.

The following resolution has been signed and sent to the General Medical Council:—

We the undersigned registered dental surgeons in practice in Torquay and Paignton, S. Devon, desire to draw your attention to the urgent need for some action to be taken to check the increasing evil of unregistered persons practising dentistry and evading the Dentists Act of 1878. During the past two years ten or more unregistered persons have started practice in these towns and the vicinity and we feel it is quite time that something should be done for our protection. (Signed)—Torquay: J. R. Andrews, F. N. Codrington Butler, Frank Briggs, J. Garnet Hernsted, Alfred Hunt, H. Helyar, T. S. Kendell, L. Strangways, J. Glanville Turle, and Rupert Wheatley. Paignton: C. B. Grenville, William Foot, James Petherbridge, and W. R. Whelock.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: APPOINTMENT OF CONSERVATOR.—At an ordinary monthly meeting of the Council of the Royal College of Surgeons held on Thursday last Dr. Arthur Keith, lecturer on anatomy and curator of the museum at the London Hospital, was appointed Conservator of the museum of the College.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—His Majesty the King has recently caused ten brace of pheasants and his annual subscription of £10 10s. to be forwarded to the Royal Waterloo Hospital, S.E. This institution was founded in 1816 by the late Queen Victoria's father, H.R H. the Duke of Kent.

PRESENTATION TO A MEDICAL PRACTITIONER.—On Feb. 6th the chief constable of Exeter, on behalf of the members of the Exeter police force, presented Mr. Joseph Anthony Wenceslaus Pereira, M.D Brux., L.R.C.P. Lond., M.R.C.S. Eng., with a portrait of himself as a mark of appreciation of his services to the force.

ASHTON INFIRMARY.—The District Infirmary, Ashton-under-Lyne, was founded in 1860 and since that time has been endowed with £64 478. The annual meeting of the subscribers was held on Feb. 1st and the familiar story told that more help was required, as the present income would not suffice for present wants, while the claims on the institution were always increasing. The deficit on general purposes was £1698 and the extension fund account was overdrawn by £1099, making a total of £2795. The chairman said that "the hospital was almost exclusively carried on for the benefit of the working people and he appealed to that class for increased help." An interesting part of the proceedings was an address by the Hon. Miss Brodrick who was a nurse at the infirmary two years ago.

ST. PETERSBURG PSYCHO-NEUROLOGICAL INSTITUTE.—The *Novoe Vremya* says that the Psycho-Neurological Institute, organised by Professor Bechtereff and involving an expenditure of £80,000, is about to begin work. The governing idea of the promoter is the "scientific observation of psychic and nerve diseases uninterruptedly and over a long series of years, as far as possible in the same patient, so that an ideal patient for the institute would be a child whose growth, development, and life would furnish to the observer a complete biography in the form of a living picture. Specialists in many aspects of human life, besides medical men, will use the institute, so that patients may be studied from every point of view." The institute is on ground belonging to the Military Medical Academy but is under the control of the Ministry of Public Education.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of this association will take place, by the courtesy of Dr. A. Miller, at the Warwick County Asylum, Hatton, on Thursday, Feb. 20th, at 3 o'clock, under the presidency of Dr. P. W. MacDonald. Dr. John Turner will give a lantern demonstration and read a paper upon Some Further Observations bearing on the Supposed Thrombotic Origin of Epileptic Fits. Dr. R. Cunyngham Brown will read a paper entitled "The Boarding-out of the Insane in Private Dwellings," which will be illustrated by lantern views. Dr. Miller invites members to luncheon at the Hatton Asylum at 1.30 P.M. and it is requested that an early reply may be sent to him Members will dine together at 7 o'clock at the Regent Hotel, Leamington, and will entertain some distinguished guests from the neighbourhood. It is hoped that as many members as possible will be present at the dinner. Evening dress is optional.

BRITISH MEDICAL ASSOCIATION: AWARD OF THE MIDDLEMORE PRIZE.—At the recent meeting of the Council of the British Medical Association the Middlemore Prize was awarded to Mr. Simeon Snell, F.R.C.S. Edin., for his contributions to the science of ophthalmology. This prize is of the value of £50, together with an illuminated scroll, and was founded by the late Richard Middlemore, ophthalmic surgeon of Birmingham, who bequeathed a sum of money for an award to be made every third year for the best essay on the scientific and practical value of improvements in ophthalmic medicine and surgery made or published during the previous three years. By a supplemental deed it was provided that the award might be made for the best essay or work on any subject in any department of ophthalmology. Mr. Simeon Snell is President-elect of the British Medical Association and the prize will be handed to him at the forthcoming annual meeting at Sheffield in July next.

DEATH OF A CENTENARIAN.—Mrs. Mary Davies of Ystradmynach died recently at the age of 104 years.

THE STATE REGISTRATION OF NURSES.—A public meeting in support of the State registration of trained nurses will be held at the Caxton Hall, Westminster, S.W., on Friday, Feb. 21st, at 3 P.M. The chair will be taken by the Lady Helen Munro Ferguson.

DONATIONS AND BEQUESTS.—The late Mr. Thomas Hawley of Coventry by will bequeathed £500 to the Barnardo Homes, and a similar sum to the Leamington Hospital for Incurables.—By the will of Mrs. Mary Berrey of St. Leonards, Sussex, £1000 are bequeathed to the Bean Site Convalescent Home, Hastings, and a like sum to the Royal Society for Incurables, Putney.—During 1907 the employees of Messrs. J. S. Fry and Sons voluntarily collected £632 for the Bristol medical charities.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Industrial Poisoning.

A COPY of the preliminary tables of cases of industrial poisoning, fatal and non-fatal accidents, and dangerous occurrences in factories and workshops during the year 1907 has been presented to Parliament in pursuance of the Factory and Workshop Act, 1901, and the Notice of Accidents Act, 1906.

National Physical Laboratory.

The report of the Committee appointed by the Treasury to inquire generally into the work now performed at the National Physical Laboratory has been laid on the table of the House of Commons.

The Children Bill.

Several of the provisions of the Children Bill which Mr. H. SAMUEL, the Under Secretary for the Home Department, introduced into the House of Commons on Monday are of special interest to the medical profession. The measure is of a consolidating as well as of an amending nature. For example, it re-enacts the Infant Life Protection Bill of 1897, which was passed to stop the evils of baby-farming and to protect the lives of infants sent out to nurse. That Act has been found ineffective and the Government proposes that a Select Committee should examine the subject and submit conclusions to the House so to enable them to be included in the Bill in its later stages. The Bill further proposes to deal with the evil of the overlying of infants. Mr. SAMUEL stated that over 1600 infants a year met their death by overlying and that this waste of life might be prevented. The Government proposes that a penalty should be imposed in such cases. The offence is not one of wilful cruelty but of negligence, and the penalty will be a light one except in cases where drunkenness can be proved. A penalty is also proposed in cases where children meet their death by scalds and burns received through having been left alone in a room with unguarded fires.

The evil of smoking by juveniles is at last to be tackled, and no part of the Bill was received with more applause than that in which the Government proposes to put a stop to the practice, so far as is possible, by legislation. The Bill prohibits the sale of cigarettes, or of cigarette papers, to young persons under the age of 16. It further prohibits these young persons from smoking in streets and public places, and makes them liable to a reprimand for the first offence and to a light fine for subsequent infringements of the law in this respect. A still more effective provision of the Bill places in the hands of the police and of other authorised persons the power to confiscate the tobacco which is being used by these youthful smokers in the streets. The Home Office has also under consideration a plan to deal with automatic machines for the sale of cigarettes, but Mr. SAMUEL, whose remarks were circumscribed by the operation of the "ten minutes' rule," did not mention the lines on which the department proposed to proceed in this matter. The Bill, which is very comprehensive in its scope, contains clauses for the establishment of children's courts and for the separation of the child offender from the ordinary adult criminal. The proposal further is to abolish the imprisonment of children and young persons up to the age of 16 years with a few carefully designed and necessary exemptions. A most favourable reception was given to the Bill which was read a first time.

Infant Life Protection Bill.

Mr. STAVELEY HILL'S Bill to amend the Infant Life Protection Act of 1897 has been published. The object of the Bil is to extend the provisions of the Act to cases where only one child is taken in to be

nursed or maintained in consideration of a sum of money paid down. The Bill further enables the local authority to remove an infant kept by a person who is unfit by character or otherwise to have his or her care or maintenance or who is in a house unsuitable for the purpose. This subject is also dealt with in the Children Bill.

Dairies (Scotland) Bill.

A Bill has been introduced into the House of Commons by Mr. GULLAND for the purpose of regulating dairies in Scotland and insuring the purity of milk-supplies.

HOUSE OF LORDS.

TUESDAY, FEB. 11TH.

Milk Legislation.

The Earl of NORTHBROOK asked the President of the Board of Agriculture whether it was the intention of the Government to introduce legislation with regard to the milk supply during the present session; and, in the event of such legislation being introduced by the Local Government Board, what steps the Board of Agriculture proposed to take for the purpose of safeguarding the interests of agriculture.

Earl CARRINGTON said that, as had been announced in the House of Commons, it was the intention of the Government to introduce legislation this session with regard to milk-supply. He admitted that the present control of the milk industry was not at all in as satisfactory condition as could be wished. The Board of Agriculture was anxious to do everything it possibly could to put the industry on a safer and more satisfactory basis. As regarded the second part of the question the Government could not be expected to make a definite announcement until the proposals were a little more developed. He would do all he could legitimately to protect farmers consistently with the public interest.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 5TH.

Moisture in Irish Butter.

Mr. RICHARDSON asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, what labelling would be necessary for Irish butter sold to the public which might contain more than 16 per cent. of moisture and up to 24 per cent. of moisture.—Sir EDWARD STRACHEY replied: The Board has no authority to determine the manner in which Irish butter containing more than 16 per cent. of water should be sold so as to avoid giving rise to a complaint by the purchaser under the Sale of Food and Drugs Acts and it is not desirable that it should express an opinion on the question.

A Case of Anthrax.

Sir FRANCIS CHANNING asked the Secretary of State for the Home Department whether an inquiry had been, or would be, made into the death by anthrax in the Royal Albert Hospital, Devonport, of John Tidds, a labourer, who had recently been employed in unloading a steamer which arrived from Karachi with a cargo of grain; and whether, having regard to occasional cases of infection from handling cargoes of hides, wool, and other articles from abroad, representations by circular, and in British possessions by regulations, had been, or would be, made and communicated to foreign shippers, British consuls, and officials to secure better precautions against infection.—Mr. GLADSTONE furnished the following written reply: Inquiries have been made by the factory inspector of the district and the certifying surgeon into this case. It appears that the man had been engaged in the hold of the vessel handling bags containing Karachi barley and it is suggested by the certifying surgeon that the infection was conveyed by the sacks. A danger of this kind is obviously one that is very difficult to guard against. The Home Office has circulated cautionary notices for posting in premises where infected material is likely to be handled, and has also, through the Foreign Office, circulated widely to our consuls abroad copies of a series of lectures on anthrax which were delivered some little time ago by the medical inspector of factories. It is difficult to see what further steps can be taken until the advance of scientific inquiry discloses new methods of detecting the danger and new precautions that may be taken to meet it.

THURSDAY, FEB. 6TH.

The Administration of the Vaccination Act, 1907.

Mr. LLOYD MORGAN asked the Secretary of State for the Home Department whether when declarations were made by conscientious objectors under the Vaccination Act, 1907, before a justice of the peace without going to petty sessions a fee of 1s. had to be paid by the person making the declaration; and whether the justice of the peace before whom the declaration was made was obliged to demand the payment of the fee and pay it over to the county fund as a clerk's fee.—Mr. GLADSTONE replied: A fee authorised by a table of justices' clerk's fees can be demanded only when a clerk has rendered the service in respect of which the fee is authorised. I am advised that when a declaration is made before a justice in the absence of a clerk no fee should be demanded.

Mr. BLACK asked the President of the Local Government Board whether he was aware that vaccination officers in some parts of the country were not sending the parents of unvaccinated and unexempted children the notice "Q" before those children reached the age of four months; and whether he would issue a special circular to all vaccination officers reminding them of their duty in this respect, so that those parents who were still unaware of the provisions of the Act of 1907 might have time to acquaint themselves with the present state of the law before it was too late for them to make a declaration of conscientious objection when they wished to do so, but were unaware of the time limit.—Mr. BURNS replied: I have not received the complaint that vaccination officers in any part of the country are not sending the notice referred to. Their duty in the matter was pointed out in a circular issued to the guardians last year, a copy of which I requested might be given to each vaccination officer. It does not seem necessary to issue another circular; but if my honourable friend is aware of any case in which the vaccination officer has omitted to serve the notice, and if he will give me the particulars of it, I will make inquiry with regard to it. I may add that in consequence of orders which I have caused to be issued the parent is made acquainted with the provisions of the new Vaccination Act at the time when the birth of the child is registered. These orders have been in force since September last.

Mr. CROOKS asked the President of the Local Government Board whether his attention had been called to difficulties that had arisen in obtaining the benefits of the Vaccination Act, 1907, in cases where the father of a child had been personally precluded from making a statutory declaration in consequence of absence from England on business as a sailor or otherwise at the time of the birth of his child and for the four months afterwards allowed by the Act in which the statutory declaration was to be made; and whether he would consider the advisability of taking steps, by legislation or otherwise, to enable in such circumstances the wife to make the necessary statutory declaration under the provisions of Section 35 of the Vaccination Act, 1867, in the absence of her husband.—Mr. BURNS replied by written answer: My attention has been called to difficulties of the kind mentioned since the passing of the Act of last session. The law officers advised in 1898 that, in ordinary circumstances, the father was the only person who could obtain a certificate of conscientious objection, and a similar view would no doubt apply to the making of a declaration under the recent Act. I am not empowered to decide whether, in circumstances such as those mentioned in the question, the mother would be the person competent to make the declaration, but it seems to me that, if she did so, proceedings ought not to be taken against the father.

FRIDAY, FEB. 7TH.

Medical Appointments in the Territorial Force.

Mr. CROOKS asked the Secretary of State for War whether it was proposed to appoint Surgeon-Lieutenant-Colonel (Honorary Surgeon-Colonel) P. B. Giles, one of the medical officers of the First Herefordshire Rifle Volunteers, to the office of principal medical officer of one of the London divisions of the Territorial Army, who did not reside in London; and, if any question of seniority of commission was concerned in the appointment, whether such a principle of selection had been adopted in connexion with similar appointments to other divisions of the Territorial Army.—Mr. HALDANE furnished the following written reply: It is proposed to appoint this officer as stated in the question. He is commandant of the Volunteer Ambulance School in London, an institution which has been most successful in training a large proportion of volunteer medical officers. He resides near London. Seniority was not the determining factor in selecting officers for the appointment mentioned in the question, but those officers best fitted to carry out the work were chosen, seniority being given its due weight.

MONDAY, FEB. 10TH.

The Medical Inspection of School Children.

Mr. WEDGWOOD asked the President of the Board of Education whether his attention had been called to the speech of the chairman of the Staffordshire education committee in which he stated that the efficiency or otherwise with which the local authorities put into operation the medical inspection of school children would be a determining factor in the annual grant given by the Board of Education; whether this was generally known by all local education authorities; and whether the Board would circularise authorities, stating at the same time that it considered the appointment of whole-time medical men, as in Staffordshire, to be the surest way of securing this efficiency.—Mr. MCKENNA replied: The Board has stated in section 10 of the Memorandum on Medical Inspection which has been issued to all local education authorities that the effectiveness of the minimum inspection required under the Act will in future be one of the elements to be considered in determining the efficiency of each school as a grant-aided school. The appointment of whole-time medical officers will no doubt be advisable in larger and more populous districts, but in view of the differences in area and population among the various local education authorities who are charged with the duties of inspection, I do not think an expression of opinion such as my honourable friend suggests could be made of universal or even of general application. The Board will always be happy to give advice to any authority which desires to consult it, but the detailed arrangements and *personnel* required will be matters in the first instance for the consideration of the authority in the light of local circumstances and existing public health organisation.

Mr. MACKARNESS asked the President of the Board of Education whether he had considered the additional expense likely to be thrown upon the local authorities by carrying out the medical inspection of children under Section 13 of the Education (Administrative Provisions) Act, 1907; and whether it was proposed to give them any relief from the Imperial Exchequer.—Mr MCKENNA answered: The financial arrangements in connexion with the forthcoming Education Bill will include an additional grant in aid of expenses of local education authorities under Part III. of the Act.

Expenditure on Vaccination.

Answering Mr. LUPTON,

Mr. BURNS said that the total expenditure by boards of guardians on vaccination in 1905 was £275,828 and in 1906 £260,295. The total expenditure for 1907 was not yet completely ascertained.

TUESDAY, FEB. 11TH.

The Royal Commission on the Feeble-Minded.

In answer to Mr. WEDGWOOD, Sir HENRY CAMPBELL-BANNERMAN said that the chairman of the Royal Commission on the Feeble-Minded had informed him that the report of the Commission, which was in an advanced condition, had recently been delayed by unforeseen circumstances, but it was confidently hoped that it would be completed before Easter.

The Sale of Tuberculous Cattle.

Mr. CATHCART WASON asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, whether he was aware that cattle in the last stages of tuberculosis were occasionally exposed for sale and food in the open market with consequent risk of spread of the disease and danger to human life; and whether he proposed to take any steps, by legislation or otherwise, in order that persons submitting dying diseased cattle for sale might be prosecuted.—Mr. BURNS sent the following written reply: My honourable friend has asked me to reply to this question.

My attention has been called to the subject referred to in it and in September last I caused a circular to be issued to local authorities bringing the matter under their notice in order that they might, as far as possible, exercise supervision over the cattle in their districts with a view to anticipating and so averting possible or intended infringement of the law. I also suggested that suitable officers of the local authority should be instructed to watch closely the cattle markets, slaughter-houses, and knackers' yards in the district, with the view of satisfying themselves that no animal, the condition of which appears to render it unfit for human consumption, is disposed of in such a manner that it is likely to be used for this purpose.

The Death-rate in Britain and Germany.

Mr. HADDOCK asked the President of the Local Government Board what was the reduction in the death-rate in Germany and the United Kingdom between the years 1870 and 1906.—Mr. BURNS furnished the following written reply: The Registrar-General's figures for England and Wales only give the death-rates for the German Empire from 1872 onwards. I have thought it better, therefore, to compare the quinquennia 1872-76 and 1901-05 and the single years 1872 and 1905:—

Percentage reduction in death-rate between—	United Kingdom.	German Empire.
	Per cent.	Per cent.
(1) 1872-76 and 1901-05	23	28
(2) 1872 and 1905	26	32

It should be added that, although the German death-rate has declined to a greater extent than the English death-rate, it remains (in 1905) 19·8 per 1000 of population, as against 15·5 per 1000 in the United Kingdom. In other words, the death-rate of Germany in 1905 was 28 per cent. higher than that of the United Kingdom.

WEDNESDAY, FEB. 12TH.

The Midwives Act.

Mr. ROGERS asked the President of the Local Government Board whether he had considered the provisions of the Midwives Act, 1902, which forbids the practice, habitually and for gain, of midwifery after Jan. 1st, 1910, by any woman not certified under the Act; whether he was aware that much doubt existed whether it would be found possible then and in future for trained certified midwives to earn an adequate livelihood by the practice of their profession in rural districts where population and births were few in number; and whether, in view of the importance of proper care for mother and child and the close proximity of the date after which unskilled attendance was forbidden, he was prepared to introduce further legislation charging the supervising authorities, as created by the Act of 1902, with the duty and the power of securing for all cases of childbirth within their area such efficient nursing as the Act requires, but for which no provision was made.—Mr. BURNS replied: The attention of the Government has been called to this matter, which is primarily one for the Lord President of the Council. I understand that the whole subject is receiving his consideration and that he is in communication with the Central Midwives Board with regard to it.

BOOKS, ETC., RECEIVED.

AMERICAN OPHTHALMOLOGICAL SOCIETY, Hartford. (Secretary, Dr. S. B. St. John, 26, Pratt-street. Hartford, Conn., U.S.A.).

Transactions of the American Ophthalmological Society. Forty-third Annual Meeting, Washington, D.C., 1907. Vol. XI., Part II.

APPLETON, SIDNEY, London.

A Text-book of Minor Surgery. By Edward Milton Foote, A.M., M.D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University); Lecturer on Surgery, New York Polyclinic Medical School. Price 21*s* net.

A King in Rags. By Cleveland Moffett. Price 6*s*.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Nouveau Traité de Chirurgie. Publié en Fascicules sous la Direction de A. Le Dentu et Pierre Delbet. V. Maladies des Os, Lésions Infectieuses, Parasitaires, Trophiques, Néoplasiques. Par Pl. Mauclaire, Professeur Agrégé à la Faculté de Médecine de Paris, Chirurgien de la Maison Municipale de Santé. Price, paper, Fr.6.; cloth, Fr. 7·50.

BAILLIÈRE, TINDALL AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

Protozoa and Disease, Comprising Sections on the Causation of Small-pox, Syphilis, and Cancer. By J. Jackson Clarke, M.B. Lond., F.R.C.S. formerly Pathologist to St. Mary's Hospital and Curator of the Museum, Demonstrator of Bacteriology, and Provisional Teacher of Biology in the Medical School. Part II. Price 7*s*. 6*d*. net.

BALLANTYNE AND CO., LIMITED, Tavistock-street, Covent Garden, London, W.C.

The Principles of the Treatment of Gout. By Alfred W. Sikes, M.D., D.Sc.Lond., F.R.C.S., M.R.C.P., late Medical Registrar, Demonstrator of Physiology and Demonstrator of Practical Medicine to St. Thomas's Hospital, and Pathologist to Queen Charlotte's Hospital, Pathologist to the Samaritan Hospital, Demonstrator of Physiology to King's College. Price not stated.

Egypt and How to See It. Illustrated by A. O. Lamplough. Price 2*s*. 6*d*.

BELL, GEORGE, AND SONS, London.

The Black Death of 1348 and 1349. By Francis Aidan Gasquet, D.D., Abbot President of the English Benedictines. Second edition. Price 6*s*. net.

BUTTERWORTH AND CO 11 and 12, Bell Yard, Temple Bar, London.

A Treatise on the Law relating to the Devolution of Real Estate on Death, under Part I. of the Land Transfer Act, 1897, and the Administration of Assets, Real and Personal. By the late Leopold George Gordon Robbins (Late Reader in Equity to the Inns of Court), and Frederick Trentham Maw, both of Lincoln's Inn, Barristers-at-Law. Fourth edition. By Frederick Trentham Maw. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

The Functional Inertia of Living Matter: A Contribution to the Physiological Theory of Life. By David Fraser Harris, M.B., C.M., M.D., B.Sc. Lond., F.R.S.E., Lecturer on Physiology and Normal Histology in the University of St. Andrews; Examiner to the University of St. Andrews LL.A. Scheme; Vice-president of the Scottish Microscopical Society; Member of the Physiological Society and Royal Society of Medicine. Price 5*s*. net.

Lectures on Medical Jurisprudence and Toxicology, as delivered at the London Hospital by Fred. J. Smith, M.A., M.D. Oxon., F.R.C.P. Lond., F.R.C.S. Eng., Physician to, and Lecturer on, Forensic Medicine at the London Hospital; Medical Referee to the Home Office. Second edition. Price 8*s*. 6*d*. net.

Reports of the Society for the Study of Disease in Children. Vol. VII. Session of 1906-1907. Editor: George Carpenter, M.D. Price 12*s*. 6*d*. net.

CONSTABLE, ARCHIBALD, AND CO., LIMITED, 10, Orange-street, Leicester-square, London, W.C.

Detection of the Common Food Adulterants. By Edwin M. Bruce, Instructor in Chemistry, Indiana State Normal School. Price 5*s*. net.

Dairy Laboratory Guide. By Charles W. Melick, B.S.A., M.S., Professor of Dairy Husbandry, Maryland Agricultural Experimental Station. Price 5*s*. net.

DEUTICKE, FRANZ, Leipzig und Wien.

Die Augenheilkunde in der Römerzeit. Von Dr. Rodolfo del Castillo y Quartiellers in Madrid. Autorisierte Übersetzung aus dem Spanischen. Von Dr. Max Neuburger, Professor an der K.K. Universität in Wien. Price not stated.

DOIN, OCTAVE, 8, Place de l'Odéon, Paris.

Maladies de la Moëlle et du Bulbe (Non Systématisées): Polio myélites, Sclérose en Plaques, Syringomyélie. Par le Dr. C. Oddo, Professeur à l'École de Médecine de Marseille, Médecin des Hôpitaux de Marseille. Price not stated.

GOOSE AND SON, Norwich (SIMPKIN, MARSHALL, AND CO., London).

The Ritual of Temperance and Bodily Cleanliness. By Dr. H. C. Pattin, M.A., D.P.H., Medical Officer of Health for the City of Norwich. Price 1*s*. net.

HEALTH RESORTS BUREAU, THE, 27, Chancery-lane, London, W.C.

The Lake of Garda. By J. Greble Leech. The Official Guide to Lake Garda. Price 1*s*. net.

KEGAN PAUL, TRENCH, TRÜBNER AND CO., LIMITED, Dryden House, Gerrard-street, London, W.

A Proposal for a Simplified Calendar. By Alexander Philip, LL.B. Price 6*d*. net.

LEWIS, H. K., 136, Gower-street, London, W.C.

Diseases of the Nose and Throat. By Herbert Tilley, B.S. Lond., F.R.C.S. Eng., Surgeon to the Ear and Throat Department, University College Hospital, London; Teacher of Laryngology and Otology, University of London; formerly Surgeon to the Golden-square Throat Hospital, London. Price 14*s*. net.

Tumours of the Cerebellum. By John Wyllie, M.D. Price 4*s*. net.

LLOYD, EDWARD, LIMITED, Salisbury-square, London.

The Municipal Year-book of the United Kingdom for 1908. Edited by Robert Donald. Price 7*s*. 6*d*. net.

LONGMANS, GREEN, AND CO., London, New York, Calcutta, and Bombay.

Proceedings of the Royal Society of Medicine. Vol. I., No. 2. December, 1907. Price 7*s*. 6*d*.

Stoichiometry. By Sydney Young, D.Sc., F.R.S., Professor of Chemistry in the University of Dublin. Together with an Introduction to the Study of Physical Chemistry by Sir William Ramsay, K.C.B., F.R.S., Editor of the Series. Price 7*s*. 6*d*.

MACMILLAN AND CO., LIMITED, St. Martin's-street, London.

Comparative Anatomy of Vertebrates. Adapted from the German of Dr. Robert Wiedersheim, Professor of Anatomy, and Director of the Institute of Human and Comparative Anatomy in the University of Freiburg-in-Baden. By W. N. Parker, Ph.D., Professor of Zoology at the University College of South Wales and Monmouthshire in the University of Wales. Third edition (founded on the sixth German edition). Price 16*s*. net.

NEW SYDENHAM SOCIETY, THE, London. (Agent: H. K. LEWIS, 136, Gower-street, London, W.C.)

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (A Continuation of the "Atlas of Pathology") chiefly from Original Sources. Fasciculus XXVII. (Double Number) being XXV. of the Clinical Atlas. Diseases of Fallopian Tube, Ovary, Uterus, &c. Price to non-subscribers 1 guinea.

STEVENS, B. F., AND BROWN, 4, Trafalgar-square, Charing Cross, London.

Optimism a Real Remedy. By Horace Fletcher. With a Foreword by William Dana Orcutt. Price 2*s*. 6*d*. net.

"THE LOCAL GOVERNMENT JOURNAL" OFFICE, 27A, Farringdon-street, London, E.C.

The Local Government Annual and Official Directory, 1908. Officially corrected. Edited by S. Edgecumbe Rogers. Seventeenth Year of Publication. Price 1*s*. 6*d*.

WILSON, EFFINGHAM, 51, Threadneedle-street, London, E.C.

A Handy Book on the Law of Private Trading Partnership. By James Walter Smith, Esq., K.C., LL.D., of the Inner Temple, Barrister-at-Law. Thirtieth thousand. New and revised edition. Price 1s. 6d. net.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

"First Aid" to the Injured and Sick. An Advanced Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. Tunstall, M.D., F.R.C.S. Ed. Fifth edition. Revised and enlarged. 30th thousand. Price, paper, 1s. net., cloth, 2s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALEXANDER, G. H., has been appointed Clinical Assistant to the Samaritan Free Hospital.

CHISOLM, R. A., M.B., B.S. Oxon., has been appointed Assistant Physician to the North-Eastern Hospital for Children, Hackney-road, Bethnal Green.

CRESWELL, A. H., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cinderford District of the county of Gloucester.

HALL, GEORGE, M.D. Lond., B.Sc. Durh., M.R.C.P. Lond., has been appointed Honorary Pathologist to the Royal Victoria Infirmary, Newcastle-on-Tyne.

HAWES, IVON HENRY SKIPWITH, M.B., B.S. Durh., has been appointed Medical Officer and Public Vaccinator for the No. 4 District by the Chipping Sodbury (Gloucestershire) Board of Guardians.

HUGHES, ROBERT, M.B. Lond., has been appointed Medical Officer to the School Management Committee, Fenton, Staffordshire.

MORGAN, DAVID JAMES, M.D., B.C. Cantab., D.P.H. R.C.P.S., has been appointed Medical Officer of Health of the County Borough of Swansea.

RACE, JOHN PERCY, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Assistant Medical Officer at the Joint Counties Asylum, Carmarthen.

REVIE, A., M B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the works of Messrs. Grant, Ritchie, and Co., Limited, at Kilmarnock, in the county of Ayr.

WEBB, GILBERT L., M.B., B.C. Cantab., has been appointed Resident Medical Officer at the British Lying-in Hospital.

WILSON, WILLIAM ROBERT, L.R.C.P. & S. Irel., L.S.A., has been appointed Medical Officer to the Penzance Port Sanitary Authority.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and laundry.

BATH, ROYAL UNITED HOSPITAL.—House Physician, also House Surgeon. Salaries £80 per annum, with board, lodging, and washing.

BEDFORDSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health Salary £250 per annum, rising to £300, with expenses.

BENENDEN SANATORIUM FOR TUBERCULOSIS.—Medical Superintendent. Salary £250 per annum, with board, lodging, and attendance.

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 and fees. Also Junior Resident House Surgeon. Salary £80 and fees.

BOLINGBROKE HOSPITAL Wandsworth Common, S.W.—House Surgeon. Salary £75 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior and Junior House Surgeons. Salary for Senior £130 and for Junior £100 per annum, with apartments, board, and attendance.

BRADFORD EDUCATION COMMITTEE.—Two Assistants (one male, one female) to the Medical Superintendent. Salary £350 per annum each.

BRIGHTON, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £600 per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, residence, and laundry.

BRISTOL ROYAL INFIRMARY.—Obstetric Officer. Salary £75 per annum. Also Junior House Surgeon for six months. Salary at rate of £50 per annum. Also Casualty Officer for six months Salary at rate of £50 per annum. All with board, lodging, and washing.

CARDIFF EDUCATION COMMITTEE.—Two Assistant Medical Officers. Salaries in each case £220 per annum, rising by £10 yearly to £250 per annum.

CARMARTHEN, JOINT COUNTIES LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary £160, increasing to £180 per annum, with board, lodging, washing, and attendance.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with residence, board, and washing.

GREAT NORTHERN CENTRAL HOSPITAL.—Casualty Officer. Salary £100 per annum.

HAMMERSMITH INFIRMARY AND WORKHOUSE, Ducane-road, Wormwood Scrubs, W.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse. Salary £120 per annum, with board, lodging, and washing.

HAMPSTEAD GENERAL HOSPITAL, WITH WHICH IS AMALGAMATED THE NORTH-WEST LONDON HOSPITAL.—Two Physicians and one Surgeon.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

INVERNESS DISTRICT ASYLUM.—Assistant Medical Officer. Salary £10 per annum, with board, lodging, and laundry.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum and board.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

LEICESTER INFIRMARY.—Assistant House Physician, for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

LINDSEY COUNTY COUNCIL, Lincolnshire.—Medical Officer of Health and Medical Inspector of School Children. Salary £400 per annum, rising to £500, with expenses.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Surgeon, also House Physician. Salary £60 each per annum, with residence and maintenance.

LONDON TEMPERANCE HOSPITAL.—Medical Registrar and Surgical Registrar. Salaries 40 guineas per annum. Also Pathologist and Bacteriologist. Salary 50 guineas per annum. Also Anæsthetist. Salary 20 guineas per annum. Also Radiographer. Salary 10 guineas per annum.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Resident Anæsthetist. Salary at rate of £40 per annum. Also Casualty Officer. Salary at rate of £150 per annum.

MIDDLESEX HOSPITAL, W.—Registrar to the Cancer Wards, also Scholar in the Cancer Research Laboratories. Salary of the Registrar £40 per annum and of the Research Scholar £60 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Albany Memorial, Queen-square, Bloomsbury.—Assistant Pathologist. Salary 50 guineas per annum.

NEW HOSPITAL FOR WOMEN.—Senior Assistant, Out-patient Children's Department; Two House Surgeons; Pathologist; also Medical Woman to take Charge of the Mechano-Therapeutic Department.

NORFOLK COUNTY COUNCIL.—Medical Officer of Health. Salary £500 per annum, rising to £650.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, &c.

NOTTINGHAMSHIRE EDUCATION COMMITTEE.—School Medical Officer. Salary £300 per annum, and travelling expenses.

PLYMOUTH ROYAL EYE INFIRMARY.—Honorary Surgeon.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

ROYAL NAVY, MEDICAL DEPARTMENT.—Examination for not less than 15 Commissions.

ST. GEORGE-IN-THE-EAST INFIRMARY AND WORKHOUSE AND CASUAL WARDS.—Assistant Medical Officer. Salary £120 per annum, with rations and apartments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, London, E. —Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, all found.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence and board.

WORCESTERSHIRE, BARNSLEY HALL ASYLUM, Bromsgrove.—Second Assistant Medical Officer. Salary £150 per annum, with quarters, board, washing, and attendance.

Births, Marriages, and Deaths.

BIRTH.

TANNER.—On Feb. 4th, at Farnham, Surrey, the wife of Charles E. Tanner, M.D., F.R.C.S., of a son.

MARRIAGE.

BEAMAN—COOPER.—On Feb. 1st, at St. Barnabas Church, Addison-road, Kensington, W., Winfrid Kelsey Beaman, Lieutenant, Royal Army Medical Corps, to Mary Ringland Cooper, of 1, Kensington Hall-gardens, W., only daughter of the late Mrs. W. A. Cooper.

DEATHS.

GALTON.—On Feb. 7th, at Chunam, Sylvan-road, Upper Norwood, John Henry Galton, M.D. Lond.

REAN.—On Feb. 6th, at Oxford-gardens, W., Surgeon-General William Henry Rean, M.D., retired, Indian Army, in his 81st year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MISAPPLIED INGENUITY.

Two men are said to have purchased 38 pound packages of margarine with a quarter of a pound of butter at 10*d*. The police stated that the quarter of a pound of butter had been cut into small pieces, one of which had been put on the end of the pound packages of margarine, so that intending customers could then taste the genuine 10*d*. butter without coming to the margarine. One of the men went into a small shop in Blackburn, posing as a farmer whose milk float had broken down, and asked the shopkeeper if she would take a pound of butter at 1*s*. She took it, but as it was a little short of weight she received 1*d*. back. The men pleaded guilty and were sent to prison for three months. This will give them time to think over, and perhaps to improve on, their plans. It is a pity that so much ingenuity should take such an abnormal twist.

PRECAUTIONS IN DISPENSING POISONOUS LINIMENTS AND APPLICATIONS TO HOSPITAL PATIENTS.

To the Editor of THE LANCET.

SIR,—A distressing case of poisoning by misadventure has recently come under my observation in which a hospital patient, 76 years of age, took some aconite, belladonna, and chloroform liniment in mistake for a dose of medicine with fatal results, in spite of the fact that the liniment was dispensed in a fluted poison bottle, distinctly labelled *poison*, for *external use only*. This very forcibly impresses upon me the necessity of safeguarding the public as far as possible against such mishaps by a further precaution—that is, using a metal sprinkler instead of an ordinary cork for such bottles, which method would serve two useful purposes. In the first place it cannot be removed from the bottle without attracting the attention of children or persons who cannot read or in the case of a person under the influence of drink or distracted with pain. And in the second place it would insure economy in using the liniment which is a distinct consideration for those engaged in hospital dispensing, and although many suggestions have been made from time to time to make poison bottles more distinctive none appears to me so practical as using a sprinkler instead of an ordinary cork. Some years ago a similar fatality occurred with an out-patient of a London hospital, but in that instance the belladonna liniment was dispensed in an ordinary eight-ounce medicine bottle.

I am, Sir, yours faithfully,

J. A. THOMAS, M.P.S.

General Hospital, Cheltenham, Feb. 8th, 1907.

H. R. T.—We cannot give our correspondent an answer without knowing the circumstances of the case more definitely. There might be no harm in "Upsilon's" request.

ERRATUM.—In our analytical notice of Irish whisky on p. 433 in our issue last week, in the sentence "Analysis readily discriminated the two, the former being a blend of pot-still and patent-still spirit and the latter a pure pot-still spirit," the word "principally" was inadvertently omitted between the words "latter" and "a."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.)

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9 30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2 30 P.M.), St. Peter's (2 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.3) A M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY. (*Pathological Section*). 8.30 P.M., Discussion on Acidosis in Pregnancy (opened by Dr. J. B. Leathes). Dr. Spriggs and Dr. Bainbridge will continue the discussion. The Obstetric Section of the Royal Society of Medicine is especially invited.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Mr. C. J. Symonds: Tuberculosis of the Kidney (illustrated by lantern slides, cases, and specimens). (Second Lettsomian Lecture.)

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 20, Hanover-square, W.

FRIDAY.—8.30 P.M., Fleet-Surgeon P. W. Bassett-Smith: Kala Azar in the Royal Navy (with illustrative cases). Sir Patrick Manson: A Case of Kala Azar ending in Recovery. Dr. J. Cropper: Phenomenal Abundance of Malarial Parasites in the Peripheral Circulation from a Case of Pernicious Malaria in the Jordan Valley.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos street, Cavendish-square, W.

FRIDAY.—5 P.M., Dr. G. Carpenter, Dr. E. Cautley, Dr. Whipham, Dr. P. Parkinson, Mr. G. Pernet, Mr. M. Yearsley Mr. S. Stephenson, and others: Cases. Mr. H. S. Clogg: A Case of Intestinal Obstruction, Resection of a Foot of Gangrenous Intestine, Recovery.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Mr. C. L. Curties and Mr. J. E. Barnard Exhibitions of Slides and Lamp. Mr. E. M. Nelson: Eye-pieces for the Microscope. Rev. E. Tozer: The Life History of a New Protophyte. Mr. F. Chapman: On Dimorphism in the Recent Foraminifer, Alveolina Boscii.

CHELSEA CLINICAL SOCIETY, Chelsea Dispensary, Manor-street, Chelsea, S.W.

TUESDAY.—8.30 P.M., Mr. C. English: The Quiescent Appendix Dr. T. W. Parkinson: Contrast of Symptoms in Two Cases of Cancer of the Pancreas.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. V. Bonney: A Study of the Connective Tissues in Carcinoma and in certain Pathological Conditions preceding its Onset. (Hunterian Lectures.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. M. H. MacLeod: Lupus Erythematosus.

TUESDAY.—4 P.M., Dr. W Harris: Clinique (Medical). 5.15 P.M., Dr. M. C. Hawkes: Swedish Medical Gymnastics, their Application in the Treatment of Diseases of the Nervous System.

WEDNESDAY.—4 P.M., Mr. J. Pardoe: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. Mackenzie: The Nature of the Symptoms in Heart Failure.

THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. T. W. Eden: The Examination of Pregnant Women before Labour.

FRIDAY.—4 P.M., Mr. A. Lawson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, road, W.

MONDAY.—12 noon, Lecture:—Dr. Low: Pathological. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Davis: Clinical.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12 noon: Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Moullin: Gynæcological Cases.

WEDNESDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Pritchard: On the Vaccination Treatment of Infective Diseases.

THURSDAY.—12 noon, Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Edwards: Clinical.

FRIDAY.—10 A.M., Dr. M. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

URDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics X Rays. Dr. Scott: Diseases of the Eye. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Cliniques:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinique:—10.30 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles).

WEDNESDAY.—Cliniques:—2.30 P.M., Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations. (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. W. Edmunds: Surgical Aneurysm.

FRIDAY.—10 A.M., Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2.15 P.M., Sir Dyce Duckworth: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. W. Turner: Surgery. 4 P.M., Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2.15 P.M., Dr. R. T. Hewlett: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. Hewlett: Some Bacteriological Methods of Diagnosis.

WEDNESDAY.—2.15 P.M., Dr. F. Taylor: Medicine. 2.30 P.M., Operations. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 11 A.M., Eye.

THURSDAY.—2.15 P.M., Dr. G. Rankin: Medicine. 2.30 P.M., Operations. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical 12 noon, Ear and Throat.

FRIDAY.—2.15 P.M., Dr. R. Bradford: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: Cancer of the Œsophagus.

SATURDAY.—2.30 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.

MONDAY.—9 A.M., Operations (Mr. White). 2.30 P.M., In-patients—Medical (Dr. Beevor); Out-patients—Medical (Dr. Willcox), Surgical (Mr. Low), Eye (Mr. Morton and Mr. Coats).

TUESDAY.—2.30 P.M., In-patients—Medical (Dr. Beale), Throat and Ear (Mr. Waggett); Out-patients—Surgical (Mr. Edmunds), Throat and Ear (Mr. French); Operations (Mr. Beale).

WEDNESDAY.—2.30 P.M., In-patients—Surgical (Mr. Stabb); Out-patients—Medical (Dr. Horder), Gynæcological (Dr. Lockyer), Skin (Dr. Whitfield), Teeth (Mr. Baly); Operations (Mr. Stabb).

THURSDAY.—2.30 P.M., In-patients—Medical (Dr. Morison).

FRIDAY.—3.30 P.M., Lecture:—Dr. G. French: Subjective Noises in the Head.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Dr. Ormerod: Hysteria.

FRIDAY.—3.30 P.M., Lecture:—Dr. Collier: Myasthenia Gravis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Lecture:—Dr. M. Dockrell: Syphilis as it Modifies other Eruptions of the Skin: Symptoms, Diagnosis, and Treatment.

CHARING CROSS HOSPITAL.

THURSDAY.—3 P.M., Demonstration:—Dr. Galloway and Dr. MacLeod: Diseases of the Skin. 4 P.M., Demonstration:—Dr. I. Bruce: Electrical. (Post-Graduate Course).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.

WEDNESDAY.—4 P.M. Lecture:—Dr. Perkins: Cases from the Wards.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Still: Dyspepsia in Children past the Period of Infancy.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 13th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 7	30·68	S.W.	...	62	50	40	43	43	Foggy
,, 8	30·46	W.	...	72	47	40	39	41	Fine
,, 9	30·44	W.	...	57	49	40	38	40	Cloudy
,, 10	30 45	S.W.	...	62	50	40	42	44	Overcast
,, 11	30 58	W.	...	65	51	40	40	41	Overcast
,, 12	30 49	S.W.	...	75	51	41	45	45	Cloudy
,, 13	30 23	E.	...	57	43	36	36	36	Hazy

During the week marked copies of the following newspapers have been received:—*Kensington News, Westminster Gazette, West Sussex Gazette, Daily Dispatch (Manchester), Montreal Gazette (Canada), Dublin Daily Express, Dublin Evening Telegraph, Dundee Advertiser, Liverpool Daily Post and Mercury, Daily News, Bath Herald, Yorkshire Observer, Broad Arrow,* &c.

Communications, Letters, &c., have been received from—

A.—Mr. W. F. Allingham, Worthing; Apothecaries' Hall, Ireland, Dublin, Secretary of; Messrs. Arthur and Co., Lond.; Mr. Thomas Allen, Lower Wick; Mr. G. Armand, Paris; Agence Franco-Anglaise de Publicité, Paris; Argyll Motors, Alexandria.

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I.—India, Under-Secretary of State for, Lond.; Ilford, Ltd., Ilford, *Interstate Medical Journal*, St. Louis.

J.—Dr Ernest Jones, Lond.

K.—Dr. H. Kerr, Newcastle-on-Tyne; Mr. S. Keir, Lancaster; Messrs. Knoll and Co., Lond.; Messrs. R. A. Knight and Co., Lond.; Dr. Charles Kerr, Dundee; Messrs. Kemsley Lond.

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Q.—Dr. L. C. Query, Paris.

R.—Dr. S. J. Ross, Bedford; Captain E. A. Roberts, I.M.S., Sanawar, India; Royal Society of Medicine, Lond., Secretary of; Mr. A. Rau, Frankfort; Major O. Robinson, R.A.M.C., Gibraltar; Mr. C. Ryall, Lond.; Royal Victoria Infirmary, Newcastle-on-Tyne, Secretary of; Royal Waterloo Hospital, Lond., Special Appeal Committee, Organising Secretary of; Messrs. Reynolds and Branson, Leeds.

S.—Dr. A. B. Slater, Lond.; Messrs. Savory and Moore, Lond.; Messrs. G. Street and Co., Lond.; Messrs. Stonebridge and Foll, Woburn Sands; Dr. Frank Shufflebotham, Newcastle-under-Lyne; Dr. E. I. Spriggs, Lond.; Mr. N. L. Usher Somers, West Bromwich; Seamen's Hospital, Society, Lond., Secretary of; Messrs. Southall, Birmingham; Star Engineering Co., Wolverhampton; Smith's Advertising Agency, Lond.; Dr. E. F. Sherman, Richmond, U.S.A.; Selangor State, Acting-Surgeon of; Dr G. Arbour Stephens, Swansea; Scholastic, Clerical, &c., Association, Lond.

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V.—Dr. G. Variot, Paris.

W.—Dr. J. Sim Wallace, Lond.; Dr. W. H. Wright, Derby; Dr. O. C. Withrow, Fort William; Messrs. J. Wiley and Son, New York; Mr. C. Walker, Liverpool; Wand Manufacturing Co., Leicester; Mr. James R. Whitwell, Melton; Mr. A. G. Whitehorne-Cole, Hove; Worcestershire County Council, Worcester, Clerk of; W. T. S.; Mr. J. Williams, Bradford; Messrs. Willing and Co., Lond.

Y.—Mr. Evan Yellon, Lond.

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